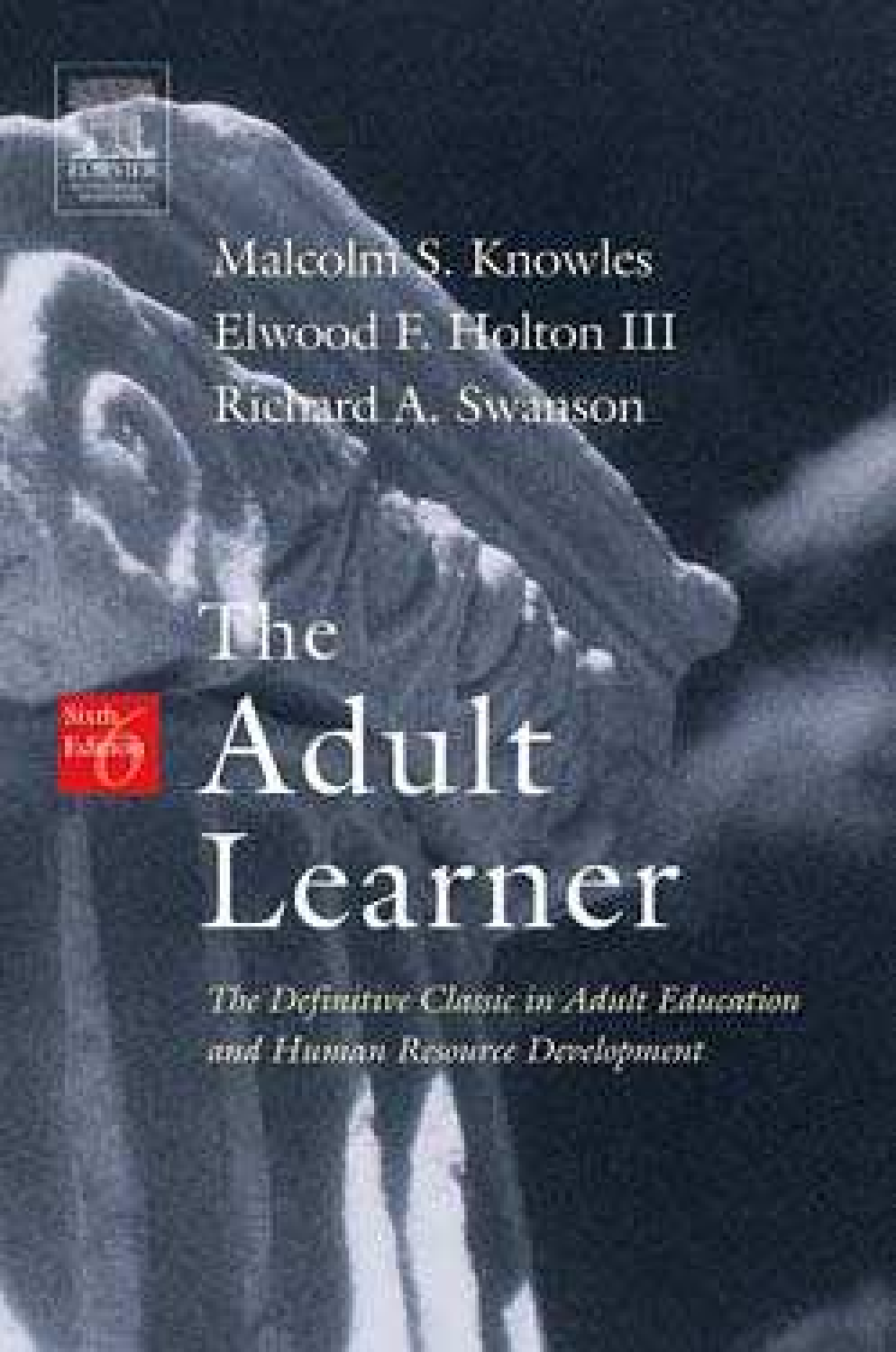
Malcolm S. Knowles
Elwood F. Holton III
Richard A. Swanson
The
Adult
Learner
Sixth Edition
The Definitive Classic in Adult Education and Human Resource Development

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MALCOLM S. KNOWLES ■ ELWOOD F. HOLTON III

RICHARD A. SWANSON

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Dedication

Malcolm S. Knowles, the Father of Andragogy in the United States, died on November 27, 1997.

Malcolm was one of the world's leading scholar–practitioners of adult learning. He was a member of a generation that experienced the fullest range of character-building phases the United States has known: a massive influx of immigrants, several wars, an economic depression, waves of technological advances, the civil rights movement, the dominance of the knowledge worker, and an optimism about the human spirit. While Malcolm participated in all this, he was one of the thinkers and doers rising above the milieu and pointing the way for a dynamic democracy. Equivalent leaders of his generation, in such areas as economics, quality improvement, religion, and psychology, have finished their work and their legacy lives on in the next generation. Malcolm's early understanding of the importance of adult learning has provided insight that will guide the professions dedicated to adult learning into the next millennium.

This revised sixth edition of Malcolm's 1973 book is a testimony to his own learning journey and his personal confidence in the individual learner. In honor of Malcolm S. Knowles, the Academy of Human Resource Development has named its doctoral-dissertation-of-the-year award in his name. Those wishing to make a donation to this student-award endowment should contact the Academy.

Elwood F. Holton III, Ed.D, is the Jones S. Davis Distinguished Professor of Human Resource Development and Adult Education at Louisiana State University, where he coordinates the B.S., M.S., and Ph.D. degree programs in HRD/AE. He is the author and editor of numerous books and articles on learning and human resource development as well as the founding editor of *Human Resource Development Review*. Dr. Holton is also a Past-President of the Academy of Human Resource Development. He is an expert on adult learning applications in public and private settings and consults extensively with organizations in both sectors.

Richard A. Swanson, Ed.D., is Professor of Human Resource Development and Adult Education at the University of Minnesota. He has wide-ranging teaching and consulting experience and has published extensively in the areas of learning and human resource development. He received the Distinguished Alumni Award from the University of Illinois College of Education and has been inducted into both the International Adult and Continuing Education Hall of Fame and the Human Resource Development Scholar Hall of Fame. Dr. Swanson is a leading authority on how to develop and unleash human potential in organizations.

Contents

Preface

Welcome to the newest edition of *The Adult Learner*. It is an honor for us to join with Malcolm Knowles in this updated and revised sixth edition. *The Adult Learner* has stood as a core work on adult learning for over thirty years. Our goal has been for it to remain a classic in the field of adult learning and human resource development.

We approached the task of continuing to update this classic book with care and thoughtfulness. In shaping this revision, we think it is still important to preserve Malcolm's works and thoughts as close to their original form as possible. Thus, just as in the 5th edition, you will find that Part 1 of this edition (Chapters 2-6), entitled "The Roots of Andragogy," are nearly identical to Chapters 1-5 of the 4th edition of *The Adult Learner*. We have done only minor copy editing and formatting to preserve Malcolm's original thinking. Chapter 1 and Part 2 (Chapters 7-11), entitled "Advancements in Adult Learning," are our new contributions to the book. In addition, Part 3, "Practice in Adult Learning" has been updated and expanded.

Highlights of the sixth edition include bringing back material from Knowles' previous work covering his process model for program planning; a completely new chapter on the Andragogy in Practice model first introduced in the 5th edition; a new chapter on the Future of Andragogy; the addition of the Personal Adult Learning Style Inventory developed by Malcolm and previously sold by HRD Press; and adding reflection questions to the end of each chapter. We hope you will agree that we have only improved upon the very successful 5th edition.

Each of the three parts of *The Adult Learner* have their own style. While the voices are varied, the messages are harmonious. The

messages of lifelong learning, faith in the human spirit, and the role that adult learning professionals play in the adult learning process come through chapter by chapter.

Our hope is that this new edition of *The Adult Learner*, and its potential to advance adult learning wherever it is practiced, is realized and that Malcolm Knowles' vision continues to thrive in this new century.

We would like to thank several colleagues for their help at various points in this effort. Sharon Naquin provided many hours of careful critique and research that were invaluable. We also appreciate the advice from our colleagues Reid A. Bates, Harold Stubblefield, Richard J. Torraco, and Albert K. Wiswell for critiquing the manuscript. Finally, thanks to our families who continue to believe that our work is important and worth the sacrifices.

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CHAPTER 1

Introduction

In the early 1970s when andragogy and the concept that adults and children learn differently was first introduced in the United States by Malcolm Knowles, the idea was groundbreaking and sparked much subsequent research and controversy. Since the earliest days, adult educators have debated what andragogy really is. Spurred in large part by the need for a defining theory within the field of adult education, andragogy has been extensively analyzed and critiqued. It has been alternately described as a set of guidelines (Merriam, 1993), a philosophy (Pratt, 1993), a set of assumptions (Brookfield, 1986), and a theory (Knowles, 1989). The disparity of these positions is indicative of the perplexing nature of the field of adult learning; but regardless of what it is called, "it is an honest attempt to focus on the learner. In this sense, it does provide an alternative to the methodology-centered instructional design perspective" (Feur and Gerber, 1988). Merriam, in explaining the complexity and present condition of adult learning theory, offers the following:

> It is doubtful that a phenomenon as complex as adult learning will ever be explained by a single theory, model or set of principles. Instead, we have a case of the proverbial elephant being described differently depending on who is talking and on which part of the animal is examined. In the first half of this century, psychologists took the lead in explaining learning behavior; from the 1960s onward, adult educators began formulating their own ideas about adult learning and, in particular, about how it might differ from learning in childhood. Both of these approaches are still operative. Where we are headed, it seems, is toward a multifaceted understanding of adult learning, reflecting the inherent richness and complexity of the phenomenon.

Despite years of critique, debate, and challenge, the core principles of adult learning advanced by andragogy have endured (Davenport and Davenport, 1985; Hartree, 1984; Pratt, 1988), and few adult learning scholars would disagree with the observation that Knowles' ideas sparked a revolution in adult education and training (Feur and Gerber, 1988). Brookfield (1986), positing a similar view, asserts that andragogy is the "single most popular idea in the education and training of adults." Adult educators, particularly beginning ones, find these core principles invaluable in shaping the learning process to be more conducive to adults.

It is beyond the scope of this introductory book to address the many dimensions of the theoretical debate raised in academic circles. Our position is that andragogy presents core principles of adult learning that in turn enable those designing and conducting adult learning to build more effective learning processes for adults. It is a transactional model in that it speaks to the characteristics of the learning transaction, not to the goals and aims of that transaction. As such, it is applicable to any adult learning transaction, from community education to human resource development in organizations.

Care must be taken to avoid confusing core principles of the adult learning transaction with the goals and purposes for which the learning event is being conducted. They are conceptually distinct, though as a practical matter may overlap considerably. Critiques of andragogy point to missing elements that keep it from being a defining theory of the *discipline of adult education* (Davenport and Davenport, 1985; Grace, 1996; Hartree, 1984), not of *adult learning*. Grace, for example, criticizes andragogy for focusing solely on the individual and not operating from a critical social agenda or debating the relationship of adult education to society. This criticism reflects the goals and purposes of adult education. Human resource developers in organizations will have a different set of goals and purposes, which andragogy does not embrace either. Community health educators may have yet another set of goals and purposes that are not embraced.

Therein lies the strength of andragogy: It is a set of core adult learning principles that apply to all adult learning situations. The goals and purposes for which the learning is offered are a separate issue. Adult education (AE) professionals should develop and debate models of adult learning separately from models of the goals and

purposes of their respective fields that use adult learning. Human resource development (HRD), for example, embraces organizational performance as one of its core goals, whereas adult education may focus more on individual growth.

Having said that, these core principles are also incomplete in terms of learning decisions. Figure 1-1 graphically shows that andragogy is a core set of adult learning principles. The six principles of andragogy are (1) the learner's need to know, (2) self-concept of the learner, (3) prior experience of the learner, (4) readiness to learn, (5) orientation to learning, and (6) motivation to learn. These principles are listed in the center of the model. As you shall see in this and subsequent chapters, there are a variety of other factors that affect adult learning in any particular situation and may cause adults to behave more or less closely to the core principles. These include *individual learner* and, *situational differences*, and *goals* and *purposes of learning*, shown in the two outer rings of the model. Andragogy works best in practice when it is adapted to fit the uniqueness of the learners and the learning situation. We see this not as a weakness of the principles, but as a strength. Their strength is that these core principles apply to all adult learning situations, as long they are considered in concert with other factors that are present in the situation.

This sixth edition of *The Adult Learner* provides a journey from theory to practice in adult learning. Figure 1-1 provides a snapshot summary of the journey in displaying the six core adult learning principles surrounded by the context of individual and situational differences, and the goals and purposes of learning. The following chapters will reveal the substance and subtleties of this holistic model of andragogy in practice.

Plan for the Book

The first part of the book, "The Roots of Andragogy" (Chapters 2–6), presents the core principles of adult learning: andragogy. It traces the development of the theory and focuses on the core unique characteristics of adults as learners.

Part 2, "Advances in Adult Learning," (Chapters 7–11) addresses the two outer rings. Chapter 7 discusses in detail the Andragogy in Practice model introduced in this chapter and discusses how to apply

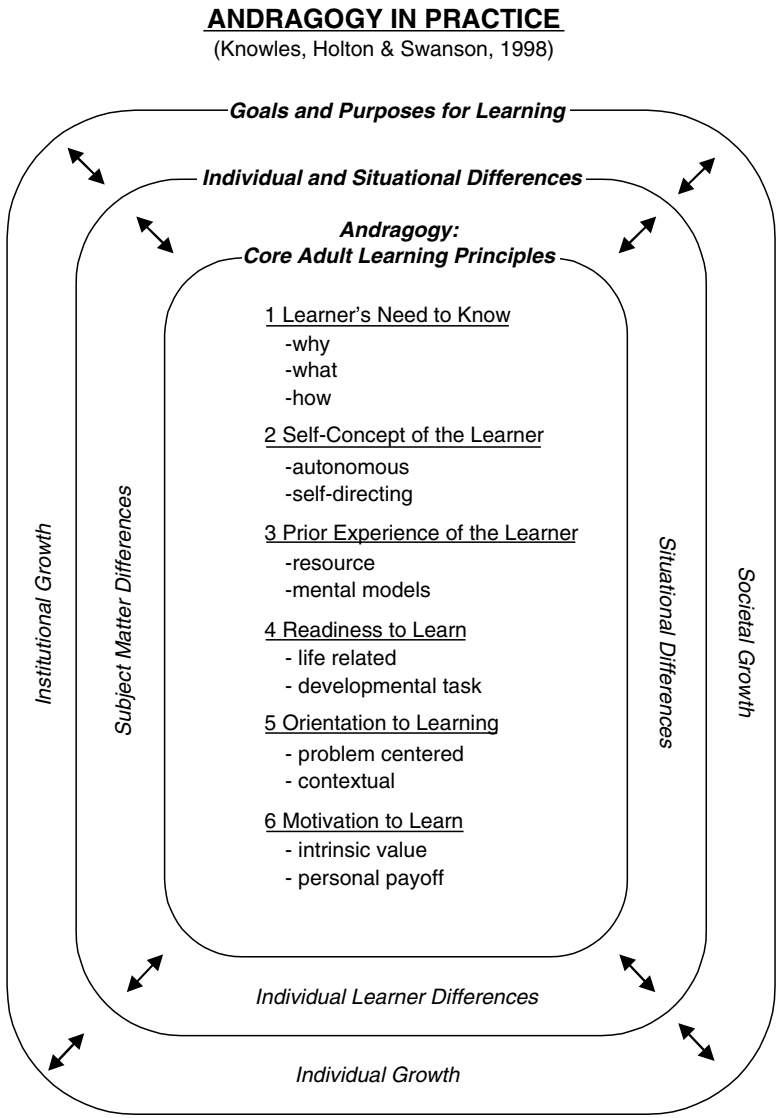

Figure 1-1. *Andragogy in practice (Knowles, Holton, and Swanson, 1998).*

it in different settings. Chapter 8 discusses adult learning as practiced within human resource development. Chapter 9 focuses on new thinking about andragogy and elaborates on applying the core principles to different learners. Chapter 10 discusses new advancements in the understanding of adult learning that enable facilitators to further

adapt application of the core principles. Chapter 11 summarizes these two sections by looking at the future of andragogy in the areas of research and practice.

Part 3, "Practice in Adult Learning" (Chapters 12-19), presents selected readings that elaborate on specific aspects of andragogy in practice. These include strategies to implement the core assumptions, to tailor learning to individual differences, and to implement adult learning in organizations. Of special interest are two self-assessment instruments, the Core Competency Diagnostic and Planning Guide (Chapter 16) and the Personal Adult Learning Style Inventory (Chapter 17), that enable the reader to begin a personal development journey in adult learning.

Reflection Questions

1.1 What are your general thoughts on how humans learn?

1.2 Based on personal experience, what key factors are related to adult learning?

1.3 If you understood more about how adults learn, how would you use this information?

PART 1

The Roots of Andragogy

History and Principles of Classic Andragogical Adult Learning Theory

CHAPTER 2

Exploring the World of Learning Theory

WHY EXPLORE LEARNING THEORY?

This is a good question. Perhaps you shouldn't. If you have no questions about the quality of learning in your organization, if you are sure it's the best it can be, we suggest that you cancel your order for this book and get a refund. However, if you're a policy-level leader, a change agent, a learning specialist, or a consultant, you should seriously consider exploring learning theory. Doing so will increase your understanding of various theories and your chances for achieving your desired results.

Policy-level leader may have such questions as: Are our HRD interventions based on assumptions about human nature and organizational life that are congruent with the assumptions on which our management policies are based? Is our HRD program contributing to long-run gains in our human capital, or only short-run cost reduction? Why do our HRD personnel make the decisions they do concerning priorities, activities, methods and techniques, materials, and the use of outside resources (consultants, package programs, hardware, software, and university courses)? Are these the best decisions? How can I assess whether or not, or to what degree, the program is producing the results I want?

Managers may have all of these questions plus others, such as: Which learning theory is most appropriate for which kind of learning, or should our entire program be faithful to a single learning theory? How do I find out what learning theories are being followed by

the various consultants, package programs, and other outside resources available to us? What difference might their theoretical orientation make in our program? What are the implications of the various learning theories for our program development, selection and training of instructional personnel, administrative policies and practices, facilities, and program evaluation?

Learning specialists (instructors, curriculum builders, and methods, materials, and media developers) may have some of those questions in addition to the following: How can I increase my effectiveness as a learning specialist? Which techniques will be most effective for particular situations? Which learning theories are most congruent with my own view of human nature and the purpose of education? What are the implications of the various learning theories for my own role and performance?

Consultants (change agents, experts, and advocates) may have some of these questions plus others, such as: Which learning theory should I advocate under what circumstances? How shall I explain the nature and consequences of the various learning theories to my clients? What are the implications of the various learning theories for total organizational development? Which learning theory is most consistent with my conception of the role of consultant?

A good theory should provide explanations of phenomena as well as guidelines for action. But theories about human behavior also carry with them assumptions about human nature, the purpose of education, and desirable values. Understandably, then, a better understanding of the various learning theories will result in better decisions regarding learning experiences and more desirable outcomes.

WHAT IS A THEORY?

It seems that most writers in this field don't expressly define the term *theory*, but expect their readers to derive its meaning from their use of the term. Torraco (1997) informs us that "a theory simply explains what a phenomenon is and how it works" (p. 115).

Webster's Seventh New Intercollegiate Dictionary gives five definitions: (1) the analysis of a set of facts in their relation to one another; (2) the general or abstract principles of a body of fact, a science, or an art; (3) a plausible or scientifically acceptable general principle

or body of principles offered to explain phenomena; (4) a hypothesis assumed for the sake of argument or investigation; (5) abstract thought. Learning theorists use all five of these definitions in one way or another, but with wide variations in their usage:

Here, for example, are some definitions by usage in context.

> The research worker needs a set of assumptions as a starting point to guide what he/she does, to be tested by experiment, or to serve as a check on observations and insights. Without any theory, researcher activities may be as aimless and as wasteful as the early wanderings of the explorers in North America . . . knowledge of theory always aids practice. (Kidd, 1959, pp. 134–135)

> A scientist, with the desire to satisfy his/her curiosity about the facts of nature, has a predilection for ordering his/her facts into systems of laws and theories. He/she is interested not only in verified facts and relationships, but in neat and parsimonious ways of summarizing these facts. (Hilgard and Bower, 1966, pp. 1–2)

> Every managerial act rests on assumptions, generalizations, and hypotheses—that is to say, on theory. (McGregor, 1960, p. 6)

> Few people, other than theorists, ever get excited about theories. Theories, like vegetables and televised golf tournaments, don't trigger provocative reactions from people. Most theories, except those that are truly revolutionary, such as the contributions of Newton, Einstein, and Darwin, just do their jobs quietly behind the scenes. They may increase our understanding of a real-world event or behavior or they may help us predict what will happen in a given situation. But they do so without a lot of fanfare. (Torraco, 1997, p. 114)

From these excerpts and perspectives we can see that a theory can be a guiding set of assumptions (Kidd), an ordering system that neatly summarizes the facts (Hilgard and Bower), and/or assumptions, generalizations, and hypotheses (McGregor). And, as Torraco points out, theories can be tacit. Yet, we must examine another important perspective: the fact that there are some psychologists who don't believe in theories at all. For example, Skinner objects to theories on the score that the hypothesis-formulation-and-testing

procedures they generate are wasteful and misleading. "They usually send the investigator down the wrong paths, and even if the scientific logic makes them self-correcting, the paths back are strewn with discarded theories" (Hilgard and Bower, 1966, p. 143). Skinner believes that the end result of scientific investigation is a "described functional relationship demonstrated in the data." After reviewing the classical theories, he comes to the conclusion that "such theories are now of historical interest only, and unfortunately, much of the work which was done to support them is also of little current value. We may turn instead to a more adequate analysis of the changes which take place as a student learns" (Skinner, 1968, p. 8).

Similarly, Gagne (1965) writes, "I do not think learning is a phenomenon which can be explained by simple theories, despite the admitted intellectual appeal that such theories have" (p. v). He goes on to explain, however, that a number of useful generalizations can be made about classes of performance change, which he describes as conditions of learning.

Where does all this leave us in answering the question, What is a theory? Perhaps the only realistic answer is that a theory is what a given author says it is. If you want to understand his or her thinking you have to go along with his or her definitions. So here is our definition: *A theory is a comprehensive, coherent, and internally consistent system of ideas about a set of phenomena.*

WHAT IS LEARNING?

Any discussion of a definition of learning must be prefaced with an important and frequently made distinction—the one between education and learning.

Education is an activity undertaken or initiated by one or more agents that is designed to effect changes in the knowledge, skill, and attitudes of individuals, groups, or communities. The term emphasizes the educator, the agent of change who presents stimuli and reinforcement for learning and designs activities to induce change.

The term *learning*, by contrast, emphasizes the person in whom the change occurs or is expected to occur. Learning is the act or process by which behavioral change, knowledge, skills, and attitudes are acquired (Boyd, Apps, et al., pp. 100–101).

Having made this distinction, we can proceed with our definition of learning. However, defining learning, like defining theory, can prove complicated. Some learning theorists assert that defining learning is difficult, while still others maintain that there is no basic disagreement about the definition of learning between the theories. Smith (1982) summarizes the difficulty of defining learning in these words:

> It has been suggested that the term learning defies precise definition because it is put to multiple uses. Learning is used to refer to (1) the acquisition and mastery of what is already known about something, (2) the extension and clarification of meaning of one's experience, or (3) an organized, intentional process of testing ideas relevant to problems. In other words, it is used to describe a product, a process, or a function. (p. 34)

In contrast, Ernest Hilgard, one of our most distinguished contemporary interpreters of learning theory, concludes that the debate centers on interpretation and not definition.

> While it is extremely difficult to formulate a satisfactory definition of learning so as to include all the activities and processes which we wish to include and eliminate all those which we wish to exclude, the difficulty does not prove to be embarrassing because it is not a source of controversy as between theories. The controversy is over fact and interpretation, not over definition. (Hilgard and Bower, 1966, p. 6)

This generalization appears to hold with regard to those learning theorists who dominated the field until recently, although there are striking variations in the degree of precision among them. Let's start with three definitions by different authors as presented in *Readings in Human Learning*.

> Learning involves change. It is concerned with the acquisition of habits, knowledge, and attitudes. It enables the individual to make both personal and social adjustments. Since the concept of change is inherent in the concept of learning, any change in behavior implies that learning is taking place or has taken place. Learning that occurs during the process of change can be referred to as the *learning process*. (Crow and Crow, 1963, p. 1)

> Learning is a change in the individual, due to the interaction of that individual, and his environment, which fills a need and makes him more capable of dealing adequately with his environment. (Burton, 1963, p. 7)

> There is a remarkable agreement upon the definition of learning as being reflected in a change in behavior as the result of experience. (Haggard, 1963, p. 20)

The last notion implies that we don't directly know what learning is, but can only infer what it is. This idea is supported by Cronbach (1963), who stated, "Learning is shown by a change in behavior as a result of experience" (p. 71). Harris and Schwahn (1961) go back to, "Learning is essentially change due to experience," but then go on to distinguish among *learning as product*, which emphasizes the end result or outcome of the learning experience, *learning as process*, which emphasizes what happens during the course of a learning experience in attaining a given learning product or outcome, and *learning as function*, which emphasizes certain critical aspects of learning, such as motivation, retention, and transfer, which presumably make behavioral changes in human learning possible (pp. 1–2).

Others take care to distinguish between planned learning and natural growth.

> Learning is a change in human disposition or capability, which can be retained, and which is not simply ascribable to the process of growth. (Gagne, 1965, p. 5)

> Learning is the process by which an activity originates or is changed through reacting to an encountered situation, provided that the characteristics of the change in activity cannot be explained on the basis of native response tendencies, maturation, or temporary states of the organism (e.g., fatigue, drugs, etc.). (Hilgard and Bower, 1966, p. 2)

The concepts of control and shaping lie at the heart of Skinner's (1968) treatment of learning: (1) "Recent improvements in the conditions which control behavior in the field of learning are of two principal sorts. The Law of Effect has been taken seriously; we have made sure that effects do occur under conditions which are optimal

for producing changes called learning" [control] and (2) Once we have arranged the particular type of consequence called a reinforcement, our techniques permit us to shape the behavior of an organism almost at will (p. 10).

Clearly, these learning theorists (and most of their precursors and many of their contemporaries) see learning as a process by which behavior is changed, shaped, or controlled. Other theorists prefer to define learning in terms of growth, development of competencies, and fulfillment of potential. Jerome Bruner (1966), for example, observes, "It is easy enough to use one's chosen theory for explaining modifications in behavior as an instrument for describing growth; there are so many aspects of growth that any theory can find something that it can explain well." He then lists the following "benchmarks about the nature of intellectual growth against which to measure one's efforts at explanation":

1. Growth is characterized by increasing independence of response from the immediate nature of the stimulus.
2. Growth depends upon internalizing events into a "storage system" that corresponds to the environment.
3. Intellectual growth involves an increasing capacity to say to oneself and others, by means of words or symbols, what one has done or what one will do.
4. Intellectual development depends upon a systematic and contingent interaction between a tutor and a learner.
5. Teaching is vastly facilitated by the medium of language, which ends by being not only the medium for exchange but the instrument that the learner can then use himself in bringing order into the environment.
6. Intellectual development is marked by increasing capacity to deal with several alternatives simultaneously, to tend to several sequences during the same period of time, and to allocate time and attention in a manner appropriate to these multiple demands. (pp. 4–6)

Still other theorists feel that even this emphasis on growth, with its focus on cognitive development, is too narrow to explain what learning is really about. For instance, Jones (1968) objects to Bruner's

underemphasis on emotional skills, his exclusive attention to extrapsychic stimuli, the equating of symbolism with verbalism, and his preoccupation with the processes of concept attainment to the seeming exclusion of the processes of concept formation or invention (pp. 97–104).

Nevertheless, Bruner is moving away from the perception of learning as a process of controlling, changing, or shaping behavior and putting it more in the context of competency development. One of the most dynamic and prolific developments in the field of psychology, *humanistic psychology*, has recently exploded on the scene (the Association of Humanistic Psychology was founded in 1963) and has carried this trend of thought much farther. Carl Rogers is one of its exponents. The elements of humanistic psychology, according to Rogers (1969), include:

1. *Personal involvement*. The whole person, including his or her feelings and cognitive aspects, are involved in the learning event.
2. *Self-initiation*. Even when the impetus or stimulus comes from the outside, the sense of discovery, of reaching out, of grasping and comprehending, comes from within.
3. *Pervasiveness*. Learning makes a difference in the behavior, attitudes, perhaps even the personality of the learner.
4. *Evaluation by the learner*. The learner knows whether the learning meets personal need, whether it leads toward what the individual wants to know, whether it illuminates the dark area of ignorance the individual is experiencing. The locus of evaluation, we might say, resides definitely in the learner.
5. *Its essence is meaning*. When such learning takes place, the element of meaning to the learner is built into the whole experience. (p. 5)

Maslow (1970) sees the goal of learning to be self-actualization: "the full use of talents, capacities, potentialities, etc." (p. 150). He conceives of growth toward this goal as being determined by the relationship of two sets of forces operating within each individual. "One set clings to safety and defensiveness out of fear, tending to regress backward, hanging on to the past. . . . The other set of forces impels him forward toward wholeness to Self and uniqueness of Self,

toward full functioning of all his capacities. . . . We grow forward when the delights of growth and anxieties of safety are greater than the anxieties of growth and the delights of safety" (1972, pp. 44–45).

Building on the notion that "insights from the behavioral sciences have expanded the perception of human potential, through a re-casting of the image of man from a passive, reactive recipient, to an active, seeking, autonomous, and reflective being," Sidney Jourard (1972) develops the concept of *independent learning*:

> That independent learning is problematic is most peculiar, because man always and only learns by himself. . . . Learning is not a task or problem; it is a way to be in the world. Man learns as he pursues goals and projects that have meaning for him. He is always learning something. Perhaps the key to the problem of independent learning lies in the phrase "the learner has the need and the capacity to assume responsibility for his own continuing learning." (p. 66)

Other educational psychologists question the proposition that learning can be defined as a single process. For example, Gagne (1972) identifies five *domains of the learning process*, each with its own praxis:

1. *Motor skills*, which are developed through practice.
2. *Verbal information*, the major requirement for learning being its presentation within an organized, meaningful context.
3. *Intellectual skills*, the learning of which appears to require prior learning of prerequisite skills.
4. *Cognitive strategies*, the learning of which requires repeated occasions in which challenges to thinking are presented.
5. *Attitudes*, which are learned most effectively through the use of human models and "vicarious reinforcement." (pp. 3–41)

Tolman distinguished six types of "connections or relations" to be learned: (1) cathexes, (2) equivalence beliefs, (3) field expectancies, (4) field-cognition modes, (5) drive discriminations, and (6) motor patterns (Hilgard and Bower, 1966, pp. 211–213).

Bloom and his associates (1956, p. 7) identified three domains of educational objectives: (1) cognitive, "which deal with the recall or recognition of knowledge and the development of intellectual abilities and skills"; (2) affective, "which describe changes in interest, attitudes, and values, and the development of appreciations and adequate adjustment"; and (3) psychomotor. Later scholars expanded on the psychomotor domain to include all the human senses and their dimensions.

It is certainly clear by now that learning is an elusive phenomenon. And, as we shall see next, the way people define it greatly influences how they theorize and go about effecting it. Until recently, educators of adults have been wallowing around in this same morass, and after wallowing around in it a bit more ourselves, we'll see how adult educators are beginning to extricate themselves.

SUMMARY

Exploring learning theory can be beneficial to policy-level leaders, managers, learning specialists, and consultants by providing information that will allow better decisions and ultimately more desirable learning experiences. However, doing so is not a simple task. In order to explore learning theory, one must understand several key concepts including the definition of theory, the distinction between learning and education, and the complexities involved in defining learning. We know that some learning theorists consider a theory to be a guiding set of assumptions, an ordering system that neatly summarizes the facts, and/or assumptions, generalizations, and hypotheses. Some psychologists, however, oppose the concept of learning theories. For instance, Gagne asserts that despite the "intellectual appeal," learning cannot be readily explained by theories. Analyzing the changes that occur as a student learns, according to Skinner, produces more valuable information than the "wasteful" and "misleading" procedures generated by theories. Despite these objections, we conclude that a theory is a comprehensive, coherent, and internally consistent system of ideas about a set of phenomena. We also acknowledge the distinction between education and learning. Education emphasizes the educator, whereas learning emphasizes the person in whom the change occurs or is expected to occur. Although this distinction is easily understood, developing a working definition

of learning is much more complex. Key components of learning theorists' definitions of learning serve as the foundation for our discussion of the definition of learning. These include change, filling a need, learning as product, learning as process, learning as function, natural growth, control, shaping, development of competencies, fulfillment of potential, personal involvement, self-initiated, learner-evaluated, independent learning, and learning domains. We define learning as the process of gaining knowledge and/or expertise.

Reflection Questions

2.1 What is the connection between theory and practice?

2.2 Why should practitioners care about theory?

2.3 What is the essential difference between the concepts of education and learning?

2.4 What definition of learning or key points about learning presented in this chapter have the most meaning to you? Why?

CHAPTER 3

Theories of Learning

Traditionally, we have known more about how animals learn than about how children learn; and we know much more about how children learn than about how adults learn. Perhaps this is because the study of learning was taken over early by experimental psychologists whose canons require the control of variables. And it is obvious that the conditions under which animals learn are more controllable than those under which children learn; and the conditions under which children learn are much more controllable than those under which adults learn. The fact is, then, that many of the "scientific" theories of learning have been derived from the study of learning by animals and children.

Propounders and Interpreters

In general, there are two types of literature about learning theory: that produced by propounders of theories (who tend to be single-minded), and that produced by interpreters of theories (who tend to be reconciliatory). Admittedly, the distinction between propounders and interpreters is not absolute. For instance, some theorists, such as Pressey, Estes, Lorge, Gagne, Hilgard, and Huhlen, have made contributions of both sorts.

Table 3-1 presents a historic list of the major propounders and interpreters in the literature of learning theory. To keep the list reasonably short, we have defined "major" as those who have made the greatest impact on the thinking of others. Those making contributions of both sorts have been placed in the column representing their major work. To provide a sense of historical development, the theorists are listed more or less in the order of appearance in the evolving body of literature.

Table 3-1
Propounders and Interpreters of Learning Theory

Propounders	Interpreters
Ebbinghaus (1885)	
Thorndike (1898)	
Angell (1896)	
Dewey (1896)	
Pavlov (1902)	
Woodworth (1906)	
Watson (1907)	
Judd (1908)	
Freud (1911)	
Kohler (1917)	
Tolman (1917)	
Wertheimer (1923)	
Koffka (1924)	Kilpatrick (1925)
Pressey (1926)	
Guthrie (1930)	Rugg (1928)
Skinner (1931)	Hilgard (1931)
Hall (1932)	
McGeoch (1932)	
Lewin (1933)	
Piaget (1935)	
Miller (1935)	
Spence (1936)	
Mowrer (1938)	
Katona (1940)	Bode (1940)
Maslow (1941)	Melton (1941)
Festinger (1942)	Cronbach (1943)
Rogers (1942)	Brunner (1943)
Estes (1944)	Lorge (1944)
Krech (1948)	
McClelland (1948)	
Sheffield (1949)	
Underwood (1949)	
Dollard (1950)	Schaie (1953)
Tyler (1950)	Garry (1953)
	Koch (1954)
	McKeachie (1954)
	Birren (1954)

(table continued on next page)

Table 3-1. Continued

Propounders	Interpreters
Bloom (1956)	Getzels (1956)
Bruner (1956)	Bugelski (1956)
Erikson (1959)	Kuhlen (1957)
Crowder (1959)	Kidd (1959)
Lumsdaine (1959)	Botwinick (1960)
Combs and Snygg (1959)	Miller (1960)
Ausubel (1960)	Glaser (1962)
Glaser (1962)	Flavell (1963)
Gagne (1963)	
	Hill (1963)
	Gage (1963)
	McDonald (1964)
Jourard (1964)	Goldstein (1965)
Suchman (1964)	Reese and Overton (1970)
Crutchfield (1969)	Goble (1971)
Friere (1970)	
Knowles (1970)	
Tough (1971)	
Houle (1972)	
Dave (1973)	
Loevinger (1976)	
Cross (1976)	
Botwinick (1977)	Howe (1977)
Gross (1977)	Knox (1977)
Srinivasan (1977)	
Cropley (1980)	Chickering (1981)
Mezirow (1981)	Darkenwald (1982)
Smith (1982)	Merriam (1982)
Wlodkowski (1985)	Brookfield (1986)
Daloz (1986)	

TYPES OF THEORIES

The proliferation of propounders has presented a major challenge to the interpreters in their quest to bring some sort of order to learning theories. Researchers have exerted considerable effort in their attempts to structure the system. However, no single, unified classification emerged from their early efforts. For instance,

Hilgard and Bower identify 11 categories of theories, McDonald identifies 6, and Gage names 3. Hilgard and Bower's (1996) 11 categories are:

Thorndike's Connectionism
Pavlov's Classical Conditioning
Guthrie's Contiguous Conditioning
Skinner's Operant Conditioning
Hull's Systematic Behavior Theory
Tolman's Purposive Behaviorism
Gestalt Theory
Freud's Psychodynamics
Functionalism
Mathematical Learning Theory
Information Processing Models

McDonald (1964, pp. 1–26) breaks the theories down into six categories in his analysis:

Recapitulation (Hull)
Connectionism (Thorndike)
Pragmatism (Dewey)
Gestalt and Field Theory (Ogden, Hartman, Lewin)
Dynamic Psychology (Freud)
Functionalism (Judd)

Gage (1972, p. 19) identifies three families of learning theories: (1) conditioning, (2) modeling, and (3) cognitive. Kingsley and Garry (1957, p. 83) provide two sets: (1) association or stimulus-response (Thorndike, Guthrie, and Hull) and (2) field theories (Lewin, Tolman, and the gestalt psychologists). Taba (1962, p. 80) agrees with the two-family set, but uses different labels: (1) associationist or behaviorist theories and (2) organismic, gestalt, and field theories.

The work of Hilgard and Bower is perhaps the most comprehensively interpretive work to date. Their frustration in arranging the

disparate categories of theories into a pattern is clearly expressed in their work.

Learning theories fall into two major families: *behaviorist/connectionist theories* and *cognitive/gestalt theories*, but not all theories belong to these two families. The behaviorist theories include such diverse theories as those of Thorndike, Pavlov, Guthrie, Skinner, and Hull. The cognitive theories include at least those of Tolman and the classical gestalt psychologists. Not completely and clearly classifiable in these terms are the theories of functionalism, psychodynamics, and the probabilistic theories of the model builders. The distinctions between the two families of theories are not based only on differences within learning theories; there are other specific issues upon which theories within one family may differ (Hilgard and Bower, 1966, p. 8).

Obviously, the interpreters had not succeeded up to this point in organizing the field of learning theories in a really fundamental way—at least not in a way that satisfied most of them, and certainly not Knowles. Then, in 1970, two developmental psychologists, Hayne W. Reese and Willis F. Overton, presented a way to conceptualize the theories in terms of larger models: the mechanistic or elemental model and the organismic or holistic model. Then, the mist began to clear.

The Concept of Part and Whole Models of Development

Reese and Overton (1970) propose that "any theory presupposes a more general model according to which the theoretical concepts are formulated" (p. 117). The most general models are the world views or metaphysical systems that constitute basic models of the essential characteristics of humankind and indeed of the nature of reality.

Two systems that have been pervasive in both the physical and the social sciences are the elemental world view, the basic metaphor of which is the machine, and the holistic world view, the basic metaphor of which is the organism—the living, organized system presented to experience in multiple forms. See Table 3-2.

The *elemental model* represents the universe as a system composed of discrete pieces operating in a spatio-temporal field. These pieces—elementary particles in motion—and their relations form the basic

Table 3-2
World Views or Metaphysical Systems

Elemental Model	Holistic Model
Represents the universe as a machine Composed of discrete pieces operating in a spatio-temporal field: reactive and adaptive model of man.	Represents the world as a unitary, interactive, developing organism: active and adaptive model of man.

reality to which all other more complex phenomena are ultimately reducible. When forces are applied in the operation of the system, a chain-like sequence of events results; and, since these forces are the only efficient or immediate causes of the events, complete prediction is possible—in principle. As Reese and Overton (1970) point out, "Consequently of the universe represented in this way, is that it is eminently susceptible to quantification" (p. 131).

The *holistic model* represents the universe as a unitary, interactive, developing organism. It perceives the essence of substance to be activity, rather than the static elementary particle. From such a point of view, one element can never be like another, and as a consequence, the logic of discovering reality according to the analytical ideal of reducing the many qualitative differences to the one is repudiated. In its place is substituted a search for unity among the many; that is, a pluralistic universe is substituted for a monistic one, and it is the diversity that constitutes the unity. Thus, unity is found in multiplicity, being is found in becoming, and constancy is found in change (Reese and Overton, 1970, p. 133).

The whole is therefore organic rather than mechanical in nature. "The nature of the whole, rather than being the sum of its parts, is presupposed by the parts and the whole constitutes the condition of the meaning and existence of the parts" (Reese and Overton, 1970). Accordingly, efficient cause is replaced by formal cause—cause by the essential nature of the form. Thus, the possibility of a predictive and quantifiable universe is precluded.

When applied to the sphere of epistemology and psychology, this world view results in an inherently and spontaneously active organism model of humans. It sees people as an active organism rather than a reactive organism, as a source of acts rather than as a

collection of acts initiated by external forces. It also represents individuals as an organized entity.

> a configuration of parts which gain their meaning, their function, from the whole in which they are imbedded. From this point of view, the concepts of psychological structure and function, or means and ends, become central rather than derived. Inquiry is directed toward the discovery of principles of organization, toward the explanation of the nature and relation of parts and wholes, structures and functions, rather than toward the derivation of these from elementary processes.
>
> The individual who accepts this model will tend to emphasize the significance of processes over products, and qualitative change over quantitative change. . . . In addition, he/she will tend to emphasize the significance of the role of experience in facilitating or inhibiting the course of development, rather than the effect of training as the source of development. (Reese and Overton, 1970, pp. 133–134)

With this and the preceding set of concepts as a frame of reference, let us turn to a brief examination of the theories about learning derived from the study of learning in animals and children.

Theories Based on an Elemental Model

While John B. Watson (1878-1958) is considered the father of behaviorism, Edward L. Thorndike conducted the first systematic investigation in this country of the phenomenon we call learning. It was a study of learning in animals, first reported in his *Animal Intelligence*, published in 1898.

Thorndike perceived inexperienced learners to be empty organisms who more or less responded to stimuli randomly and automatically. A specific response is *connected* to a specific stimulus when it is rewarded. In this situation, the stimulus, S, is entirely under the control of the experimenter (or teacher), and in large measure so is the response, R, for all the experimenter has to do to connect the particular R to a particular S is to reward the R when the organism happens to make it. This association between sense impressions and impulses to action came to be known as a bond or a connection.

Thus, Thorndike's system has sometimes been called bond psychology or *connectionism*, and was the original stimulus-response (or S-R) psychology of learning.

Thorndike developed three laws that he believed governed the learning of animals and human beings:

1. *The law of readiness* (the circumstances under which a learner tends to be satisfied or annoyed, to welcome or to reject);
2. *The law of exercise* (the strengthening of connections with practice); and
3. *The law of effect* (the strengthening or weakening of a connection as a result of its consequences).

In the course of a long and productive life (he died in 1949), and with help from many collaborators, both friendly and critical, Thorndike's system of thought became greatly refined and elaborated. It provided the subfoundation of the behaviorist theories of learning.

While Thorndike conducted his work on connections in this country, the Russian physiologist Ivan Pavlov (1849-1936) conducted his experiments that resulted in the concept of conditioned reflexes. Hilgard and Bower (1966) describe his classical experiment:

> When meat powder is placed in a dog's mouth, salivation takes place; the food is the *unconditioned stimulus* and salivation is the *unconditioned reflex*. Then some arbitrary stimulus, such as a light, is combined with the presentation of the food. Eventually, after repetition and if time relationships are right, the light will evoke salivation independent of the food; the light is the *conditioned stimulus* and the response to it is the *conditioned reflex*. (p. 48)

Pavlov's work resulted in a system that has been termed *classical conditioning* to distinguish it from later developments in *instrumental conditioning* and *operant conditioning*. In his system, he developed several concepts and accompanying techniques that have since been incorporated into the behaviorist system. These concepts are reinforcement, extinction, generalization, and differentiation. In *reinforcement*, a conditioned reflex becomes fixed by providing the conditioned stimulus and following it repeatedly with the unconditioned

stimulus and response at appropriate time intervals. *Extinction* occurs when reinforcement is discontinued and the conditioned stimulus is presented alone, unaccompanied by the unconditioned stimulus. The conditioned response gradually diminishes and disappears. It becomes "extinct." In *generalization*, a conditioned reflex evoked to one stimulus can also be elicited by other stimuli, not necessarily similar to the first. A fourth basic concept Pavlov developed was *differentiation*. In differentiation, the initial generalization is overcome by the method of contrasts in which one of a pair of stimuli is regularly reinforced and the other is not; in the end, the conditioned reflex occurs only to the positive (reinforced) stimulus and not to the negative (nonreinforced) stimulus.

The behaviorists, then and now, had and have in common the conviction that a science of psychology must be based on a study of that which is overtly observable: physical stimuli, the muscular movements and glandular secretions which they arouse, and the environmental products that ensue. The behaviorists have differed among themselves as to what may be inferred in addition to what is measured, but they all exclude self-observation (Hilgard and Bower, 1966, p. 75).

Watson placed emphasis on kinesthetic stimuli as the integrators of animal learning and, applying this concept to human beings, conjectured that thought was merely implicit speech—that sensitive enough instruments would detect tongue movements or other movements accompanying thinking.

Edward R. Guthrie (1886–1959) built on the works of Thorndike, Pavlov, and Watson and added the *principle of contiguity of cue and response*. He stated his only law of learning, "from which all else about learning is made comprehensible," as follows: "A combination of stimuli which has accompanied a movement will on its recurrence tend to be followed by that movement" (Hilgard and Bower, 1966, p. 77). In his later work, Guthrie placed increasing emphasis on the part played by the learner in selecting the physical stimuli to which it would respond; hence, the *attention or scanning behavior* that goes on before association takes place became important.

Guthrie's system of thought was further clarified and formalized by his students, Voeks and Sheffield, but the next major advance in behaviorist psychology was the result of the work of B. F.. Skinner and his associates. It is from their work that the educational technology of

programmed instruction and teaching machines so popular in the 1960s were derived. Skinner's ideas are summarized in Chapter 4.

Another development in behaviorist psychology occurring during the middle decades of the twentieth century was the construction of Clark L. Hull's *systematic behavior theory* and its elaboration by Miller, Mowrer, Spence, and others. Hull's theory is a conceptual descendant of Thorndike's, inasmuch as he adopted reinforcement as an essential characteristic of learning. Hull constructed an elaborate *mathematico-deductive* theory revolving around the central notion that there are intervening variables in the organism that influence what response will occur following the onset of a stimulus. He developed 16 postulates regarding the nature and operation of these variables, and stated them in such precise terms that they were readily subjected to quantitative testing. Hilgard and Bower's (1966) assessment of the effect of Hull's work follows:

> It must be acknowledged that Hull's system, for its time, was the best there was—not necessarily the one nearest to psychological reality, not necessarily the one whose generalizations were the most likely to endure—but the one worked out in the greatest detail, with the most conscientious effort to be quantitative throughout and at all points closely in touch with empirical tests. . . . Its primary contribution may turn out to lie not in its substance at all, but rather in the ideal it set for a genuinely systematic and quantitative psychological system far different from the schools which so long plagued psychology. (p. 187)

Undoubtedly, Hull's work also stimulated the rash of mathematical models of learning that were developed after 1950 by Estes, Burke, Bush, Mosteller, and others. It should be pointed out that these are not themselves learning theories, but mathematical representations of substantive theories.

Theories Based on an Holistic Model

John Dewey, in 1896, launched the first direct protest against the elemental model of the associationists. Although his work falls into the category of educational philosophy rather than learning theory, his emphasis on the role of interest and effort and on the child's

motivation to solve his or her own problems became the starting point for a line of theorizing that has been given the label *functionalism*. Translated into schoolroom practices, functionalism provided the conceptual basis for progressive education, which, as Hilgard and Bower (1966) state, "at its best was an embodiment of the ideal of growth toward independence and self-control through interaction with an environment suited to the child's developmental level" (p. 299).

The spirit of experimentalism fostered by functionalism is reflected in the work of such learning theorists as Woodworth, Carr, McGeogh, Melton, Robinson, and Underwood. The essence of functionalism is summarized by Hilgard and Bower (1966, pp. 302–304):

1. The functionalist is tolerant but critical.
2. The functionalist prefers continuities over discontinuities or typologies.
3. The functionalist is an experimentalist.
4. The functionalist is biased toward associationism and environmentalism.

In a sense, Edward C. Tolman (1886–1959) represents a bridge between the elemental and the holistic models. His system was behavioristic in that he rejected introspection as a method for psychological science, but it was *molar* rather than *molecular* behaviorism—an act of behavior has distinctive properties all its own, to be identified and described irrespective of the muscular, glandular, or neural processes that underlie it. But most important, he saw behavior as purposive—as being regulated in accordance with objectively determined ends. Purpose is, of course, an organismic concept. Tolman rejected the idea that learning is the association of particular responses to particular stimuli. In contrast to the associationists, who believed that it is the response or sequence of responses resulting in reward that is learned, Tolman believed it is the route to the goal that is learned. He believed that organisms, at their respective levels of ability, are capable of recognizing and learning the relationships between signs and desired goals; in short, they perceive the significance of the signs (Kingsley and Garry, 1957, p. 115). Tolman called his theory *purposive behaviorism*.

The most complete break with behaviorism occurred at the end of the first quarter of the twentieth century with the importation of the

notion of insight learning in the gestalt theories of the Germans Wertheimer, Koffka, and Kohler. These theorists took issue with the proposition that all learning consisted of the simple connection of responses to stimuli, insisting that experience is always structured, that we react not to just a mass of separate details, but to a complex pattern of stimuli. And we need to perceive stimuli in organized wholes, not in disconnected parts. The learner tends to organize his or her perceptual field according to four laws:

1. *The law of proximity.* The parts of a stimulus pattern that are close together or near each other tend to be perceived in groups; therefore, the proximity of the parts in time and space affects the learner's organization of the field.
2. *The law of similarity and familiarity.* Objects similar in form, shape, color, or size tend to be grouped in perception; familiarity with an object facilitates the establishing of a figure-ground pattern. (Related to this law is the gestaltists' view of memory as the persistence of traces in the brain that allows a carryover from previous to present experiences. They view these traces not as static, but as modified by a continual process of integration and organization.)
3. *The law of closure.* Learners try to achieve a satisfying endstate of equilibrium; incomplete shapes, missing parts, and gaps in information are filled in by the perceiver. (Kingsley and Garry [1957] observe that "closure is to Gestalt psychology what reward is to association theory"[p. 109].)
4. *The law of continuation.* Organization in perception tends to occur in such a manner that a straight line appears to continue as a straight line, a part circle as a circle, and a three-sided square as a complete square.

Gestalt psychology is classified by most interpreters as within the family of *field theories*—theories that propose that the total pattern or field of forces, stimuli, or events determine learning.

Kurt Lewin (1890-1947) developed what he referred to specifically as a field theory. Using the topological concepts of geometry, Lewin conceptualized each individual as existing in a *life space* in which many forces are operating. The life space includes features of the environment to which the individual reacts, such as material

objects encountered and manipulated, people met, and private thoughts, tensions, goals, and fantasies. Behavior is the product of the interplay of these forces, the direction and relative strength of which can be portrayed by the geometry of vectors. Learning occurs as a result of a change in cognitive structures produced by changes in two types of forces: (1) change in the structure of the cognitive field itself or (2) change in the internal needs or motivation of the individual. Because of its emphasis on the immediate field of forces, field theory places more emphasis on motivation than on any of the preceding theories. Lewin felt that success was a more potent motivating force than reward and gave attention to the concepts of ego involvement and level of aspiration as forces affecting success. He saw change in the relative attractiveness of one goal over another, which he called *valence*, as another variable affecting motivation. Since some of the strongest forces affecting an individual's psychological field are other people, Lewin became greatly interested in group and institutional dynamics; and, as you shall see later, it is in this dimension of education that his strongest influence has been felt.

Developments in the field-theoretical approach have more recently appeared under several labels: phenomenological psychology, perceptual psychology, humanistic psychology, and third-force psychology. Since the bulk of the work with this approach has been with adults, major attention to it will be reserved for a later section. Since phenomenologists are concerned with the study of the progressive development of the mind—or, as our contemporaries would insist, the person—they see humans as organisms forever seeking greater personal adequacy. The urge for self-actualization is the driving force motivating all human behavior.

Two phenomenologists, Arthur Combs and Donald Snygg, have focused on the learning of children and the role of their educators, and their findings have important implications for learning theories. The flavor of Combs and Snygg's system of thought can be caught from statements from Pittenger and Gooding (1971):

- A person behaves in terms of what is real to him or her and what is related to his or her self at the moment of action (p. 130).
- Learning is a process of discovering one's personal relationship to and with people, things, and ideas. This process results in

and from a differentiation of the phenomenal field of the individual (p. 136).

- Further differentiation of the phenomenological field occurs as an individual recognizes some inadequacy of a present organization. When a change is needed to maintain or enhance the phenomenal self, it is made by the individual as the right and proper thing to do. The role of the teacher is to facilitate the process (p. 144).
- Given a healthy organism, positive environmental influences, and a nonrestrictive set of percepts of self, there appears to be no forseeable end to the perceptions possible for the individual (pp. 150–151).
- Transfer is a matter of taking current differentiations and using them as first approximations in the relationship of self to new situations (p. 157).
- Learning is permanent to the extent that it generates problems that may be shared by others and to the degree that continued sharing itself is enhancing (p. 165).

Two other contemporary psychologists, Jean Piaget and Jerome Bruner, have had great impact on thinking about learning, although they are not literally learning theorists. Their focus is on cognition and the theory of instruction. Piaget has conceptualized the process of the development of cognition and thought in evolutionary stages. According to Piaget, the behavior of the human organism starts with the organization of sensory-motor reactions and becomes more intelligent as coordination between the reactions to objects becomes progressively more interrelated and complex. Thinking becomes possible after language develops, and with it a new mental organization. This development involves the following evolutionary periods (Piaget, 1970, pp. 30–33):

1. The formation of the symbolic or semiotic function (ages 2 to 7 or 8). The individual is able to represent objects or events that are not at the moment perceptible by evoking them through the agency of symbols or differentiated signs.
2. The formation of concrete mental operations (ages 7 or 8 to 11 or 12). Characteristic of this stage are the linking and dissociation

of classes; the sources of classification; the linking of relations; correspondences, and so on.

3. The formation of conceptual thought or formal operations (ages 11 or 12 through adolescence). "This period is characterized by the conquest of a new mode of reasoning, one that is no longer limited exclusively to dealing with objects or directly representable realities, but also employs 'hypotheses'" (Piaget, 1970, pp. 30–33).

Some reservations have been expressed about the rigid age scale and minimization of individual differences in Piaget's schema, but his conception of evolutionary stages adds a dimension that is not generally given much attention in the established learning theories.

Jerome Bruner has also been interested in the process of intellectual growth, and his benchmarks were described in Chapter 2. His main interest, however, has been in the structuring and sequencing of knowledge and translating this into a *theory of instruction*. But Bruner does have a basic theory about the act of learning, which he views as involving three almost simultaneous processes: (1) acquisition of new information, which is often information that runs counter to or is a replacement of what the person has previously known, but which at the very least is a refinement of previous knowledge; (2) transformation, or the process of manipulating knowledge to make it fit new tasks; and (3) evaluation, or checking whether the way the person manipulated information is adequate to the task (Bruner, 1960, pp. 48–49). We shall return to this theory of instruction in a later chapter.

The main criticism of Piaget, Bruner, and other cognitive theorists by other adherents to the holistic model is that they are unbalanced in their overemphasis on cognitive skills at the expense of emotional development; that they are preoccupied with the aggressive, agentic, and autonomous motives to the exclusion of the homonymous, libidinal, and communal motives; and that they concern themselves with concept attainment to the exclusion of concept formation or invention (Jones, 1968, p. 97).

In the years following Piaget's pronouncements, new avenues opened in such learning-related fields of inquiry as neurophysiology (M. Boucouvalas, K. H. Pribrain, G. A. Miller, J. E. Delefresnaye, H. E. Harlow, D. P. Kimble, W. G. Walter, D. E. Wooldridge, J. Z. Young);

mathematical modeling (R. C. Atkinson, R. R. Bush, W. K. Estes, R. D. Luce, E. Restle); information processing and cybernetics (H. Borko, E. A. Feigenbaum, B. E. Green, W. R. Reitman, K. M. Sayre, M. Yovitts, J. Singh, K. O. Smith); creativity (J. P. Guilford, R. P. Crawford, J. E. Drevdahl, A. Meadow, S. J. Parnes, J. W. Getzels, P. W. Jackson); and ecological psychology (R. G. Barker, P. V. Gump, H. E. Wright, E. P. Willems, H. L. Raush).

Summary

Learning theory literature falls into two general types: that produced by propounders and that produced by interpreters. Many propounders of theories have made a concerted effort to impose order on the system of learning theory. Among these are Hilgard and Bower, McDonald, and Gage. It was Reese and Overton, however, who successfully conceptualized the theories within a larger construct—the concept of models of development. Reese and Overton postulated that "any theory presupposes a more general model according to which the theoretical concepts are formulated." Building on this premise, they developed the elemental model and the holistic models of individuals. Among the theories based on the elemental model are Thorndike's connectionism, Pavlov's classical conditioning, and Watson's behaviorism. Other theories within this category were those developed by Guthrie, which resulted both in the principle of contiguity of cue and response and an emphasis on the importance of attention behavior. It was Guthrie's work that spawned additional research by Voeks, Sheffield, Skinner, and Hull's systematic behavior theory. Behaviorism was uniquely American and mirrored the philosophy of the turn-of-the century notion that all people could achieve great accomplishments given the opportunity (stimulus), individual initiative (response), and fair treatment (rewards).

Paralleling this effort were the holistic models. It was Dewey's work that initiated a line of theorizing called functionalism. Tolman, however, bridged the gap between cognitive and behavioral psychologies with a theory that he called purposive behaviorism. Gestalt theories, classified by most interpreters as within the family of field theories, paralleled behaviorism. The notable field theories in which Lewin was intensely interested—group and institutional dynamics—greatly influenced this educational dimension. Recent developments

in the field-theoretical approach have appeared under the labels of phenomenological psychology, perceptual psychology, humanistic psychology, and cognitive psychology.

REFLECTION QUESTIONS

3.1 Speculate as to why so many learning theories have been created.

3.2 What is the value of thinking of wholes and parts as they relate to learning?

3.3 What are some of the important points derived from elemental model learning theories?

3.4 What are some of the important points derived from holistic model learning theories?

CHAPTER 4

A Theory of Adult Learning: Andragogy

Until fairly recently, there has been relatively little thinking, investigating, and writing about adult learning. This is a curious fact considering that the education of adults has been a concern of the human race for such a long time. Yet, for many years, the adult learner was indeed a neglected species.

The lack of research in this field is especially surprising in view of the fact that all the great teachers of ancient times—Confucius and Lao Tse of China; the Hebrew prophets and Jesus in Biblical times; Aristotle, Socrates, and Plato in ancient Greece; and Cicero, Evelid, and Quintillian in ancient Rome—were teachers of adults, not of children. Because their experiences were with adults, they developed a very different concept of the learning/teaching process from the one that later dominated formal education. These notable teachers perceived learning to be a process of mental inquiry, not passive reception of transmitted content. Accordingly, they invented techniques for engaging learners in inquiry. The ancient Chinese and Hebrews invented what we now call the *case method,* in which the leader or one of the group members describes a situation, often in the form of a parable, and together with the group explores its characteristics and possible resolutions. The Greeks invented what we now call the *Socratic dialogue,* in which the leader or a group member poses a question or dilemma and the group members pool their thinking and experience to seek an answer or solution. The Romans

were more confrontational: They used challenges that forced group members to state positions and then defend them.

In the seventh century in Europe, schools were organized for teaching children, primarily for preparing young boys for the priesthood. Hence, they became known as *cathedral and monastic schools*. Since the indoctrination of students in the beliefs, faith, and rituals of the church was the principal mission of these teachers, they developed a set of assumptions about learning and strategies for teaching that came to be labeled *pedagogy,* literally meaning "the art and science of teaching children" (derived from the Greek words *paid,* meaning "child," and *agogus,* meaning "leader of"). This model of education persisted through the ages well into the twentieth century and was the basis of organization for this country's educational system.

Shortly after the end of World War I, both in the United States and in Europe, a growing body of notions about the unique characteristics of adult learners began emerging. But only in the past few decades have these notions evolved into an integrated framework of adult learning. It is fascinating to trace this evolutionary process in this country.

Two Streams of Inquiry

Beginning with the founding of the American Association for Adult Education in 1926 and the provision of substantial funding for research and publications by the Carnegie Corporation of New York, two streams of inquiry are discernible. One stream can be classified as the *scientific stream* and the other as the *artistic or intuitive/reflective stream*. The scientific stream seeks to discover new knowledge through rigorous (and often experimental) investigation, and was launched by Edward L. Thorndike with the publication of his *Adult Learning* in 1928. The title is misleading, however, for Thorndike was not concerned with the processes of adult learning but rather with learning ability. His studies demonstrated that adults could, in fact, learn, which was important because it provided a scientific foundation for a field that had previously been based on the mere faith that adults could learn. Additions to this stream in the next decade included Thorndike's *Adult Interests* in 1935 and Herbert Sorenson's *Adult Abilities* in 1938. By the onset of World War II, then, adult educators had scientific evidence that adults could learn

and that they possessed interests and abilities that were different from those of children.

On the other hand, the artistic stream, which seeks to discover new knowledge through intuition and the analysis of experience, was concerned with *how* adults learn. This stream of inquiry was launched with the publication of Eduard C. Lindeman's *The Meaning of Adult Education* in 1926. Strongly influenced by the educational philosophy of John Dewey, Lindeman (1926) laid the foundation for a systematic theory about adult learning with such insightful statements as these:

> The approach to adult education will be via the route of situations, not subjects. Our academic system has grown in reverse order: subjects and teachers constitute the starting point, students are secondary. In conventional education the student is required to adjust himself to an established curriculum; in adult education the curriculum is built around the student's needs and interests. Every adult person finds himself in specific situations with respect to his work, his recreation, his family life, his community life, etc.—situations which call for adjustments. Adult education begins at this point. Subject matter is bought into the situation, is put to work, when needed. Texts and teachers play a new and secondary role in this type of education; they must give way to the primary importance of the learners. (pp. 8–9)

> The resource of highest value in adult education is the learner's experience. If education is life, then life is also education. Too much of learning consists of vicarious substitution of someone else's experience and knowledge. Psychology is teaching us, however, that we learn what we do, and that therefore all genuine education will keep doing and thinking together. . . . Experience is the adult learner's living textbook. (pp. 9–10)

> Authoritative teaching, examinations which preclude original thinking, rigid pedagogical formulae—all these have no place in adult education. . . . Small groups of aspiring adults who desire to keep their minds fresh and vigorous, who begin to learn by confronting pertinent situations, who dig down into the reservoirs of their experience before resorting to texts and secondary facts, who are led in the discussion by teachers who are also searchers

> after wisdom and not oracles: this constitutes the setting for adult education, the modern quest for life's meaning. (pp. 10–11)
>
> Adult learning theory presents a challenge to static concepts of intelligence, to the standardized limitations of conventional education and to the theory which restricts educational facilities to an intellectual class. Apologists for the status quo in education frequently assert that the great majority of adults are not interested in learning, are not motivated in the direction of continuing education; if they possessed these incentives, they would, naturally, take advantage of the numerous free educational opportunities provided by public agencies. This argument begs the question and misconceives the problem. We shall never know how many adults desire intelligence regarding themselves and the world in which they live until education once more escapes the patterns of conformity. Adult education is an attempt to discover a new method and create a new incentive for learning; its implications are qualitative, not quantitative. Adult learners are precisely those whose intellectual aspirations are least likely to be aroused by the rigid, uncompromising requirements of authoritative, conventionalized institutions of learning. (pp. 27–28)
>
> Adult education is a process through which learners become aware of significant experience. Recognition of significance leads to evaluation. Meanings accompany experience when we know what is happening and what importance the event includes for our personalities. (p. 169)

Two excerpts from other Lindeman writings elaborate on these ideas:

> I am conceiving adult education in terms of a new technique for learning, a techniques as essential to the college graduate as to the unlettered manual worker. It represents a process by which the adult learns to become aware of and to evaluate his experience. To do this he cannot begin by studying "subjects" in the hope that some day this information will be useful. On the contrary, he begins by giving attention to situations in which he finds himself, to problems which include obstacles to

> his self-fulfillment. Facts and information from the differentiated spheres of knowledge are used, not for the purpose of accumulation, but because of need in solving problems. In this process the teacher finds a new function. He is no longer the oracle who speaks from the platform of authority, but rather the guide, the pointer-out who also participates in learning in proportion to the vitality and relevance of his facts and experiences. In short, my conception of adult education is this: a cooperative venture in nonauthoritarian, informal learning, the chief purpose of which is to discover the meaning of experience; a quest of the mind which digs down to the roots of the preconceptions which formulate our conduct; a technique of learning for adults which makes education coterminous with life and hence elevates living itself to the level of adventurous experiment. (Gessner, 1956, p. 160)

> One of the chief distinctions between conventional and adult education is to be found in the learning process itself. None but the humble become good teachers of adults. In an adult class the student's experience counts for as much as the teacher's knowledge. Both are exchangeable at par. Indeed, in some of the best adult classes it is sometimes difficult to discover who is learning most, the teacher or the students. This two-way learning is also reflected by shared authority. In conventional education the pupils adapt themselves to the curriculum offered, but in adult education the pupils aid in formulating the curricula. . . . Under democratic conditions authority is of the group. This is not an easy lesson to learn, but until it is learned democracy cannot succeed. (Gessner, 1956, p. 166)

These excerpts from the pioneering theorist are sufficient to portray a new way of thinking about adult learning, yet it is important to note that Lindeman (1926) also identified several key assumptions about adult learners. His assumptions, summarized in Table 4-1, have been supported by later research and constitute the foundation of adult learning theory:

1. Adults are motivated to learn as they experience needs and interests that learning will satisfy; therefore, these are the

appropriate starting points for organizing adult learning activities.

2. Adults' orientation to learning is life-centered; therefore, the appropriate units for organizing adult learning are life situations, not subjects.
3. Experience is the richest resource for adults' learning; therefore, the core methodology of adult education is the analysis of experience.
4. Adults have a deep need to be self-directing; therefore, the role of the teacher is to engage in a process of mutual inquiry with them rather than to transmit his or her knowledge to them and then evaluate their conformity to it.
5. Individual differences among people increase with age; therefore, adult education must make optimal provision for differences in style, time, place, and pace of learning.

It is interesting to note that Lindeman did not dichotomize adult versus youth education, but rather adult versus "conventional" education. The implication here is that youths might learn better, too, when their needs and interests, life situations, experiences, self-concepts, and individual differences are taken into account. The artistic stream of inquiry that Lindeman launched in 1926 flowed on through the pages of the *Journal of Adult Education*, the quarterly publication of the American Association for Adult Education, which, between February 1929 and October 1941, provided the most distinguished body of literature yet produced in the field of adult education. The following excerpts from its articles reveal the growing collection of insights about adult learning gleaned from the experience of successful practitioners.

Table 4-1
Summary of Lindeman's Key Assumptions About Adult Learners

1. Adults are motivated to learn as they experience needs and interests that learning will satisfy.
2. Adults' orientation to learning is life-centered.
3. Experience is the richest source for adult's learning.
4. Adults have a deep need to be self-directing.
5. Individual differences among people increase with age.

By Lawrence P. Jacks, principal of Manchester College, Oxford, England:

> Earning and living are not two separate departments or operations in life. They are two names for a continuous process looked at from opposite ends. . . . A type of education based on this vision of continuity is, obviously, the outstanding need of our times. Its outlook will be lifelong. It will look upon the industry of civilization as the great "continuation school" for intelligence and for character, and its object will be, not merely to fit men and women for the specialized vocations they are to follow, but also to animate the vocations themselves with ideals of excellence appropriate to each. At the risk of seeming fantastic I will venture to say that the final objective of the New Education is the gradual transformation of the industry of the world into the university of the world; in other words, the gradual bringing about of a state of things in which "breadwinning" and "soulsaving" instead of being, as now, disconnected and often opposed operations, shall become a single and continuous operation. (*Journal of Adult Education*, I, 1, February 1929, pp. 7–10)

By Robert D. Leigh, president of Bennington College:

> At the other end of the traditional academic ladder the adult educational movement is forcing recognition of the value and importance of continuing the learning process indefinitely. . . . But among the far-seeing leaders of the movement in the United States it is recognized not so much as a substitute for inadequate schooling in youth as an educational opportunity superior to that offered in youth—superior because the learner is motivated not by the artificial incentives of academic organization, but by the honest desire to know and to enrich his experience, and because the learner brings to his study relevant daily experience, and consequently the new knowledge takes root firmly, strikes deep, and feeds on what the day's life brings it.
>
> There is gradually emerging, therefore, a conception of education as a lifelong process beginning at birth and ending only

> with death, a process related at all points to the life experiences of the individual, a process full of meaning and reality to the learner, a process in which the student is active participant rather than passive recipient. (*Journal of Adult Education*, II, 2, April 1930, p. 123)

By David L. Mackaye, director of the Department of Adult Education, San Jose, California, public schools:

> A person is a good educator among adults when he has a definite conviction about life and when he can present intelligent arguments on behalf of it; but primarily he does not qualify as an adult educator at all until he can exist in a group that collectively disputes, denies, or ridicules his conviction, and continues to adore him because he rejoices in them. That is tolerance, an exemplification of Proudhon's contention that to respect a man is a higher intellectual feat than to love him as one's self. . . . There is positive evidence that no adult education system will ever make a success of collegiate methods of instruction to adults in the cultural fields. Something new in the way of content and method must be produced as soon as possible for adult education, and probable it will have to grow up in the field. No teacher-training-college hen can lay an adult education egg. (*Journal of Adult Education*, III, 3, June 1931, pp. 293–294)

By Maria Rogers, volunteer worker, New York City Adult Education Council:

> One type of adult education merits particular consideration and wider use by educators seeking new methods. Though meagerly publicized, it has proved effective in numerous instances. It has undertaken a far more difficult task than that assumed by the institutions for adult education which confine their concept of method to the sequence of procedure established for adults who enter classrooms to learn something already set up to be learned. Its prime objective is to make the group life of adults yield educational value to the participants. . . .
>
> The educator who uses the group method of education takes ordinary, gregarious human beings for what they are, searches out the groups in which they move and have their being, and then

> helps them to make their group life yield educational values. (*Journal of Adult Education*, X, October 1938, pp. 409–411)

By Ruth Merton, director of the Education Department, Milwaukee Y.W.C.A.:

> In a day school, where the students are usually children or young adolescents, a learned teacher-ignorant pupil relationship is almost inevitable, and frequently it has its advantages. But in a night school the situation is entirely different. Here, so far as the class is concerned, the teacher is an authority upon one subject only, and each of the students has, in his own particular field, some skill or knowledge that the teacher does not possess. For this reason, there is a spirit of give and take in a night-school class that induces a feeling of comradeship in learning, stimulating to teacher and students alike. And the quickest way to achieve this desirable state is through laughter in which all can join.
>
> And so I say again that, if we are really wise, we teachers in night schools will, despite taxes or indigestion, teach merrily! (*Journal of Adult Education*, XI, April 1939, p. 178)

By Ben M. Cherrington, chief of the Division of Cultural Relations, United States Department of State:

> Authoritarian adult education is marked throughout by regimentation demanding obedient conformity to patterns of conduct handed down from authority. Behavior is expected to be predictable, standardized. . . . Democratic adult education employs the method of self-directing activity, with free choice of subject matter and free choice in determining outcomes. Spontaneity is welcome. Behavior cannot with certainty be predicted and therefore is not standardized. Individual, critical thinking is perhaps the best description of the democratic method and it is here that the gulf is widest between democracy and the authoritarian system. (*Journal of Adult Education*, XI, 3, June 1939, pp. 244–245)

By Wendell Thomas, author of *Democratic Philosophy* and a teacher of adult education teachers in New York City:

> On the whole, adult education is as different from ordinary schooling as adult life, with its individual and social responsibilities, is different from the protected life of the child. . . . The adult normally differs from the child in having both more individuality and more social purpose.
>
> Adult education, accordingly, makes special allowance for individual contributions from the students, and seeks to organize these contributions into some form of social purpose. (*Journal of Adult Education*, *XI*, 4, October,1939, pp. 365–366)

By Harold Fields, acting assistant director of Evening Schools, Board of Education, New York City:

> Not only the content of the courses, but the method of teaching also must be changed. Lectures must be replaced by class exercises in which there is a large share of student participation. "Let the class do the work" should be adopted as a motto. There must be ample opportunity for forums, discussions, debates. Newspapers, circulars, and magazines as well as textbooks should be used for practice in reading. Extracurricular activities should become a recognized part of the educational process. . . . There are some of the elements that must be incorporated in a program of adult education for citizens if it is to be successful. (*Journal of Adult Education*, XII, January 1940, pp. 44–45)

By 1940, most of the elements required for a comprehensive theory of adult learning had been discovered, but they had not yet been brought together into a unified framework; they remained as isolated insights, concepts, and principles. During the 1940s and 1950s, these elements were clarified, elaborated on, and added to in a veritable explosion of knowledge from the various disciplines in the human sciences. (It is interesting to note that during this period there was a gradual shift in emphasis in research away from the highly quantitative, fragmentary, experimental research of the 1930s and 1940s to more holistic longitudinal case studies with a higher yield of useful knowledge.)

Contributions from the Social Sciences

Clinical Psychology

Some of the most important contributions to learning theory have come from the discipline of psychotherapy. After all, psychotherapists are primarily concerned with reeducation, and their subjects are overwhelmingly adults. (See Table 4-2 for summary.)

Sigmund Freud has influenced psychological thinking more than any other individual, but he did not formulate a theory of learning as such. His major contribution was no doubt in identifying the influence of the subconscious mind on behavior. Some of his concepts, such as anxiety, repression fixation, regression, aggression, defense mechanism, projection, and transference (in blocking or motivating learning), have had to be considered by learning theorists. Freud was close to the behaviorists in his emphasis on the animalistic nature of humans, but he saw the human being as a dynamic animal that grows and develops through the interaction of biological forces, goals, purposes, conscious and unconscious drives, and environmental influences. This is a concept more in keeping with the organismic model.

Carl Jung advanced a more holistic concept of human consciousness, introducing the notion that it possesses four functions or four ways to extract information from experience to achieve internalized understanding: sensation, thought, emotion, and intuition. His plea for the development and use of all four functions in balance laid the groundwork for the concepts of the balanced personality and the balanced curriculum.

Erik Erikson provided the "eight ages of man," the last three occurring during the adult years, as a framework for understanding the stages of personality development:

1. Oral-sensory, in which the basic issue is trust vs. mistrust.
2. Muscular-anal, in which the basic issue is autonomy vs. shame.
3. Locomotion-genital, in which the basic issue is initiative vs. guilt.
4. Latency, in which the basic issue is industry vs. inferiority.

Table 4-2
Major Contributions of Clinical Psychologists

Sigmund Freud	Identified influence of subconscious mind on behavior
Carl Jung	Introduced notion that human consciousness possesses four functions: sensation, thought, emotion, and intuition
Erik Erikson	Provided "Eight Ages of Man": Oral-sensory, muscular-anal, locomotion-genital, latency, puberty and adolescene, young adulthood, adulthood, and final stage
Abraham Maslow	Emphasized the role of safety
Carl Rogers	Conceptualized a student-centered approach to education based on five "basic hypotheses": 1. We cannot teach another person directly, we can only facilitate his learning 2. A person learns significantly only those things which he perceives as being involved in the maintenance of, or enhancement of, the structure of self 3. Experience which, if assimilated would involve a change in the organization of self, tends to be resisted through denial or distortion of symbolization 4. The structure and organization of self appear to become more rigid under threat and to relax its boundaries when completely free from threat. Experience which is perceived as inconsistent with the self can only be assimilated if the current organization of self is relaxed and expanded to include it 5. The educational situation which most effectively promotes significant learning is one in which (a) threat to the self of the learner is reduced to a minimum, and (b) differentiated perception of the field is facilitated.

5. Puberty and adolescence, in which the basic issue is identity vs. role confusion.
6. Young adulthood, in which the basic issue is intimacy vs. isolation.
7. Adulthood, in which the basic issue is generativity vs. stagnation.
8. The final stage, in which the basic issue is integrity vs. despair.

In fact, the central role of self-concept in human development (and learning) received increasing reinforcement from the entire field of psychiatry as it moved away from the medical model toward an educational model in its research and practice. (See especially the works of Erich Fromm and Karen Horney.)

But it is the clinical psychologists, especially those who identify themselves as humanistic, who have concerned themselves most deeply with problems of learning. The humanistic psychologists speak of themselves as "third-force psychologists." In Goble's (1971) words, "By 1954 when Maslow published his book *Motivation and Personality*, there were two major theories dominant" in the behavioral sciences, Freudianism and behaviorism, in which "Freud placed the major motivational emphasis on deep inner drives (and) urges and the behaviorists placed the emphasis on external, environmental influences." But "like Freud and like Darwin before him, the behaviorists saw man as merely another type of animal, with no essential differences from animals and with the same destructive, anti-social tendencies" (pp. 3-8). Third-force psychologists are concerned with the study and development of fully functioning persons (to use Rogers's term) or self-actualizing persons (to use Maslow's term). They are critical of the atomistic approach common in physical science and among the behaviorists, breaking things down into their component parts and studying them separately.

Most behavioral scientists have attempted to isolate independent drives, urges, and instincts and study them separately. Maslow found this to be generally less productive than the holistic approach that holds that the whole is more than the sum of the parts (Goble, 1971, p. 22).

Growth takes place when the next step forward is subjectively more delightful, more joyous, more intrinsically satisfying than the previous gratification with which we have become familiar and even bored; the only way we can ever know that it is right for us is that it feels better

subjectively than any alternative. The new experience validates itself rather than by any outside criterion (Maslow, 1972, p. 43).

Maslow (1972) placed special emphasis on the role of safety, which the following formulation of the elements in the growth process illustrates:

1. The healthily spontaneous [person], in his spontaneity, from within out, reaches out to the environment in wonder and interest, and expresses whatever skills he has.
2. He does this to the extent that he is not crippled by fear and to the extent that he feels safe enough to dare.
3. In this process, that which gives him the delight-experience is fortuitously encountered, or is offered to him by helpers.
4. He must be safe and self-accepting enough to be able to choose and prefer these delights, instead of being frightened by them.
5. If he can choose these experiences, which are validated by the experience of delight, then he can return to the experience, repeat it, savor it to the point of repletion, satiation, or boredom.
6. At this point, he shows the tendency to go on to richer, more complex experiences and accomplishments in the same sector (if he feels safe enough to dare).
7. Such experiences not only mean moving on, but have a feedback effect on the Self, in the feeling of certainty ("This I like; that I don't for sure"), of capability, mastery, self-trust, self-esteem.
8. In this never ending series of choices of which life consists, the choice may generally be schematized as between safety (or, more broadly, defensiveness) and growth, and since only that [person] doesn't need safety who already has it, we may expect the growth choice to be made by the safety-need gratified [individual].
9. In order to be able to choose in accord with his own nature and to develop it, the [individual] must be permitted to retain the subjective experiences of delight and boredom, as the criteria of the correct choice for him. The alternative criterion is making the choice in terms of the wish of another person. The Self is lost when this happens. Also this constitutes restricting the

choice to safety alone, since the [individual] will give up trust in his own delight criterion out of fear (of losing protection, love, etc.).

10. If the choice is really a free one, and if the [individual] is not crippled, then we may expect him ordinarily to choose progression forward.
11. The evidence indicates that what delights the healthy [person], what tastes good to him, is also, more frequently than not, "best" for him in terms of fair goals as perceivable by the spectator.
12. In this process the environment [parents, teachers, therapists] is important in various ways, even though the ultimate choice must be made by the individual.
    a. It can gratify his basic needs for safety, belongingness, love and respect, so that he can feel unthreatened, autonomous, interested and spontaneous and thus dare to choose the unknown;
    b. It can help by making the growth choice positively attractive and less dangerous, and by making regressive choices less attractive and more costly.
13. In this way the psychology of Being and the psychology of Becoming can be reconciled, and the [person], simply being himself, can yet move forward and grow. (pp. 50–51)

Carl R. Rogers, starting with the viewpoint that "in a general way, therapy is a learning process" (1951, p. 132), developed 19 propositions for a theory of personality and behavior that evolved from the study of adults in therapy (pp. 483–524) and then sought to apply them to education. This process led him to conceptualize *student-centered teaching* as parallel to client-centered therapy (pp. 388-391).

Rogers's student-centered approach to education was based on five "basic hypotheses," the first of which was: *We cannot teach another person directly; we can only facilitate his learning*. This hypothesis stems from the propositions in Rogers's personality theory that "every individual exists in a continually changing world of experience of which he is the center" and "the organism reacts to the field as it is experienced and perceived." It requires a shift in focus from what the teacher does to what is happening in the student.

His second hypothesis was: *A person learns significantly only those things that he perceives as being involved in the maintenance of, or enhancement of, the structure of self*. This hypothesis underlines the importance of making the learning relevant to the learner, and puts into question the academic tradition of required courses.

Rogers grouped his third and fourth hypotheses together: *Experience that, if assimilated, would involve a change in the organization of self, tends to be resisted through denial or distortion of symbolization,* and *the structure and organization of self appear to become more rigid under threats and to relax its boundaries when completely free from threat*. Experience that is perceived as inconsistent with the self can only be assimilated if the current organization of self is relaxed and expanded to include it. These hypotheses acknowledge the reality that significant learning is often threatening to an individual, and suggest the importance of providing an acceptant and supportive climate, with heavy reliance on student responsibility.

Rogers's fifth hypothesis extends the third and fourth to educational practice. *The educational situation that most effectively promotes significant learning is one in which (1) threat to the self of the learner is reduced to a minimum and (2) differentiated perception of the field is facilitated*. He points out that the two parts of this hypothesis are almost synonymous, since differentiated perception is most likely when the self is not being threatened. Rogers defined *undifferentiated perception* as an individual's "tendency to see experience in absolute and unconditional terms, to anchor his reactions in space and time, to confuse fact and evaluation, to rely on ideas rather than upon reality testing," in contrast to *differentiated perception* as the tendency "to see things in limited, differentiated terms, to be aware of the space-time anchorage of facts, to be dominated by facts, not concepts, to evaluate in multiple ways, to be aware of different levels of abstraction, to test his inferences and abstractions by reality, in so far as possible" (p. 1441).

Rogers sees learning as a completely internal process controlled by the learner and engaging his whole being in interaction with his environment as he perceives it. But he also believes that learning is as natural—and as required—a life process as breathing. His Proposition IV states: *The organism has one basic tendency and striving—to actualize, maintain, and enhance the experiencing organism* (p. 497). This central premise is summarized in the following statement:

> Clinically, I find it to be true that though an individual may remain dependent because he has always been so, or may drift into dependence without realizing what he is doing, or may temporarily wish to be dependent because his situation appears desperate. I have yet to find the individual who, when he examines his situation deeply, and feels that he perceives it dearly, deliberately choose dependence, deliberately chooses to have the integrated direction of himself undertaken by another. When all the elements are clearly perceived, the balance seems invariably in the direction of the painful but ultimately rewarding path of self-actualization and growth. (p. 490)

Both Maslow and Rogers acknowledge their affinity with the works of Gordon Allport (1955, 1960, 1961) in defining growth not as a process of "being shaped," but as a process of becoming. The essence of their conception of learning is captured in this brief statement by Rogers (1961): "I should like to point out one final characteristic of these individuals as they strive to discover and become themselves. It is that the individual seems to become more content to be a process rather than a product" (p. 122).

Developmental Psychology

The discipline of developmental psychology has contributed a growing body of knowledge about changes with age through the life span in such characteristics as physical capabilities, mental abilities, interests, attitudes, values, creativity, and life styles. Pressey and Kuhlen (1957) pioneered in the collection of research findings on human development and laid the foundation for a new field of specialization in psychology—life-span developmental psychology—which has been built on by such contemporary scholars as Bischof (1969) and Goulet and Baltes (1970). Havighurst (1972) identified the developmental tasks associated with different stages of growth that give rise to a person's readiness to learn different things at different times and create "teachable moments." Sheehy (1974) provided a popular portrayal of the "Predictable Crises of Adult Life" and Knox (1977) provided a more scholarly summary of research findings on adult development and learning. (See also Stevens-Long, 1979; Stokes, 1983.) Closely related to this discipline is gerontology, which has produced a large volume of research findings regarding

the aging process in the later years (Birren, 1964; Botwinick, 1967; Donahue and Tibbitts, 1957; Grabowski and Mason, 1974; Granick and Patterson, 1971; Gubrium, 1976; Kastenbaum, 1964, 1965; Neugarten, 1964, 1968; Woodruff and Birren, 1975) and their implications for learning and teaching (Burnside, 1978; Hendrickson, 1973; John, 1987; Long, 1972).

Sociology and Social Psychology

The disciplines of sociology and social psychology have contributed a great deal of new knowledge about the behavior of groups and larger social systems, including the forces that facilitate or inhibit learning and change (Argyris, 1964; Bennis, 1966; Bennis, Benne, and Chin, 1968; Bennis and Slater, 1968; Etzioni, 1961, 1969; Hare, 1969; Knowles and Knowles, 1972; Lewin, 1951; Lippitt, 1969; Schein and Bennis, 1965; Schlossberg, Lynch, and Chickering, 1989; Zander, 1982) and about environmental influences, such as culture, race, population characteristics, and density, on learning.

Philosophy

Philosophical issues have been prominent in the literature of the adult education movement in this country since its beginning. Eduard Lindeman laid the foundation of this theme in his *The Meaning of Adult Education* in 1926 (see also Gessner, 1956) and it was reinforced by Lyman Bryson in his *Adult Education* in 1936 and *The Next America* in 1952. But many of the articles in the periodicals of the American Association for Adult Education between 1926 and 1948 were also philosophical treatises, with the aims and purposes of adult education as a social movement as the predominant issue. The underlying premise of the argument was that achieving a unified and potent adult education movement required a common goal among all programs in all institutions—one side holding that this goal should be the improvement of individuals, and the other holding that it should be the improvement of society. Two attempts were made in the mid-fifties, under the sponsorship of the Fund for Adult Education of the Ford Foundation, to sway argument in favor of the latter position with

the publication of Hartley Grattan's *In Quest of Knowledge* (1955) and John Walker Powell's *Learning Comes of Age* (1956). However, this issue and arguments over other issues continued to embroil the field.

Professional philosopher, Kenneth Benne, president of the newly formed Adult Education Association of the USA in 1956, dedicated his efforts to bringing some order to the polemics. One of his first acts as president was to convene a national conference on the topic of "Philosophy of Adult Education," in North Andover, Massachusetts, in which 13 philosophers and adult educators from across the country spent three days addressing these issues:

- What is the purpose of adult education—adult education for what?
- What is the relationship between content and method in instruction?
- Should individual interests and desires prescribe the curricula of adult education, or should the needs of society play a determining role in the creation of educational programs?
- What implications do different theories of knowledge, or of the nature of man and society, have for the planning and operation of adult education programs?

The 1956 conference did not resolve these issues, but it produced three positive results:

1. It uncovered some tool concepts that would prove useful in working through the strife of tongues and the maze of special interests and moved the emphasis toward areas of genuine agreement and disagreement.
2. It revealed the importance of philosophizing as a necessary and continuing ingredient of all policy formulation and program determination.
3. It furnished an example of the pains and tribulations that men from many disciplines and from many special vantage points in adult education encounter as they venture seriously and thoughtfully to seek common ground in their chosen field. (Sillars, 1958, p. 5)

Clearly, the conference stimulated continuing discussion of the philosophical issues in adult education, as evidenced by numerous articles in the periodical literature and in at least four major books by authors Benne (1968); Bergevin (1967); Darkenwald and Merriam (1982); and Elias and Merriam (1980). It probably also influenced the publication of one book on philosophy for adult learners (Buford, 1980) and one book on the use of philosophical approaches to the improvement of practice in continuing education (Apps, 1985).

Contributions from Adult Education

Most scholars in the field of adult education itself have addressed the problem of learning by trying to adapt theories about child learning to the "differences in degree" among adults (for example, Bruner, 1959; Kempfer, 1955; Kidd, 1959; Verner and Booth, 1964). For the most part, Howard McClusky followed this line, but began to map out directions for the development of a "differential psychology of the adult potential" in which the concepts of margin (the power available to a person over and beyond that required to handle his or her load), commitment, time perception, critical periods, and self-concept are central.

Cyril O. Houle began a line of investigations in the 1950s at the University of Chicago that has been extended by Allen Tough at the Ontario Institute for Studies in Education that has yielded better understanding about the process of adult learning. Their approach was a study through in-depth interviews of a small sample of adults who were identified as continuing learners.

Houle's study of 22 subjects was designed to discover primarily why adults engage in continuing education, but it also helped explain how they learn. Through an involved process of the analysis of the characteristics uncovered in the interviews, he found that his subjects could be fitted into three categories. As Houle (1961) points out, "These are not pure types; the best way to represent them pictorially would be by three circles which overlap at their edges. But the central emphasis of each subgroup is clearly discernible" (p. 16). The criterion for classifying the individuals into subgroups was the major conception they held about the purposes and values of continuing education for themselves. The three types are:

1. The *goal-oriented learners* use education for accomplishing fairly clear-cut objectives. These individuals usually did not make any real start on their continuing education until their middle twenties and after—sometimes much later.

   The continuing education of goal-oriented learners occurs in episodes, each of which begins with the realization of a need or the identification of an interest. There is no even, steady, continuous flow to the learning of such people, though it is an ever-recurring characteristic of their lives. Nor do they restrict their activities to any one institution or method of learning. The need or interest appears and they satisfy it by taking a course, joining a group, reading a book, or going on a trip (Houle, 1961, p. 181).

2. The *activity-oriented* learners take part because they find in the circumstances of the learning a meaning that has no necessary connection—and often no connection at all—with the content or the announced purpose of the activity. These individuals also begin their sustained participation in adult education at the point when their problems or their needs become sufficiently pressing.

   All of the activity-oriented people interviewed in this study were course-takers and group-joiners. They might stay within a single institution or they might go to a number of different places, but it was social contact that they sought and their selection of any activity was essentially based on the amount and kind of human relationships it would yield (Houle, 1961, pp. 23–24).

3. The *learning-oriented* learners seek knowledge for its own sake. Unlike the other types, most learning-oriented adults have been engrossed in learning as long as they can remember. What they do has a continuity, a flow and a spread that establishes the basic nature of their participation in continuing education. For the most part, they are avid readers and have been since childhood; they join groups and classes and organizations for educational reasons; they select the serious programs on television and radio; they make a production out of travel, being sure to prepare adequately to appreciate what they see; and they choose jobs and make other decisions in life in terms of the potential for growth that they offer (Houle, 1961, pp. 24–25).

Allen Tough's investigation was concerned not only with what and why adults learn, but how they learn and what help they obtain for learning. Tough (1979) found that adult learning is a highly pervasive activity:

> Almost everyone undertakes at least one or two major learning efforts a year, and some individuals undertake as many as 15 or 20. . . . It is common for a man or woman to spend 700 hours a year at learning projects. . . . About 70 percent of all learning projects are planned by the learner himself, who seeks help and subject matter from a variety of acquaintances, experts, and printed resources. (p. 1)

Tough (1979) found that his subjects organized their learning efforts around "projects . . . defined as a series of related episodes, adding up to at least seven hours. In each episode more than half of the person's total motivation is to gain and retain certain fairly clear knowledge and skill, or to produce some other lasting change in himself" (p. 6).

He found that in some projects the episodes may be related to the desired knowledge and skill. For example, the learner may want to learn more about India. In one episode he or she reads about the people of India; in another episode the learner discusses the current economic and political situation with an Indian graduate student; in a third, he or she watches a television program describing the life of an Indian child. The episodes can also be related by the use to which the knowledge and skill will be put. For instance, one person might engage in a project consisting of a number of learning experiences to improve parenting skills; another project might consist of episodes aimed at obtaining the knowledge and skills necessary for building a boat.

Tough was interested in determining what motivated adults to begin a learning project, and overwhelmingly found that his subjects anticipated several desired outcomes and benefits. Some of the benefits are immediate: satisfying a curiosity, enjoying the content itself, enjoying practicing the skill, delighting in the activity of learning; others are long-run: producing something, imparting knowledge or skill to others, understanding what will happen in some future situation. Clearly, pleasure and self-esteem were critical elements in the motivation of Tough's subjects.

Tough concluded that adult learners proceed through several phases in the process of engaging in a learning project, and speculated that helping them gain increased competence in dealing with each phase might be one of the most effective ways of improving their learning effectiveness.

The first phase is deciding to begin. Tough identified 26 possible steps the learner might take during this phase, including setting an action goal, assessing interests, seeking information regarding certain opportunities, choosing the most appropriate knowledge and skill, establishing a desired level or amount, and estimating the cost and benefits.

The second phase is choosing the planner, which may be the learner, an object (e.g., programmed text, workbook, tape recording), an individual learning consultant (e.g., instructor, counselor, resource person), or a group. Competence in choosing a planner and proactively using the planner in a collaborative rather than dependent manner were found to be crucial in this phase.

Finally, the learner engages in learning episodes sketched out in the planning process. The critical elements here are the variety and richness of the resources, their availability, and the learner's skill in making use of them.

Tough (1979) emerged from his study with this challenging vision regarding future possibilities in adult learning:

> The last 20 years have produced some important new additions to the content of adult learning projects. Through group and individual methods, many adults now set out to increase their self-insight, their awareness and sensitivity with other persons and their interpersonal competence. They learn to "listen to themselves," to free their bodies and their conversations from certain restrictions and tensions, to take a risk, to be open and congruent. Attempting to learn this sort of knowledge and skill seemed incredible to most people 20 years ago. Great changes in our conception of what people can and should set out to learn have been created by T-groups, the human potential movement, humanistic psychology, and transpersonal psychology.
>
> Perhaps the next 20 years will produce several important additions to what we try to learn. In 1990, when people look back to

> our conception of what adults can learn, will they be amused by how narrow it is? (pp. 43-44)

Tough's prediction in the final paragraph has been borne out. Since he made it, a rising volume of research on adult learning has been reported. Most of this research builds on, reinforces, and refines the research of Tough's "last 20 years," especially in regard to the developmental stages of the adult years. Predictions are that the major new discoveries in the next decade will be related to the physiology and chemistry of learning, with special implications for the acceleration of learning and the efficiency of information processing.

The Roots of Andragogy: An Integrative Concept

Attempts to bring the isolated concepts, insights, and research findings regarding adult learning together into an integrated framework began as early as 1949, with the publication of Harry Overstreet's *The Mature Mind*. Other related publications followed, including *Informal Adult Education* (Knowles, 1950), *An Overview of Adult Education Research* (Bruner, 1959), *How Adults Learn* (Kidd, 1973), J.R. Gibb's chapter titled "Learning Theory in Adult Education" in the *Handbook of Adult Education* in the United States in 1960, and *Teaching and Learning in Adult Education* (Miller, 1964). However, these turned out to be more descriptive listings of concepts and principles than comprehensive, coherent, and integrated theoretical frameworks. What was needed was an integrative and differentiating concept.

Such a concept had been evolving in Europe for some time—the concept of an integrated framework of adult learning for which the label *andragogy* had been coined to differentiate it from the theory of youth learning called *pedagogy*. Dusan Savicevic, a Yugoslavian adult educator, first introduced the concept and label into the American culture in 1967, and Knowles wrote the article, "Androgogy, Not Pedagogy," in *Adult Leadership* in April 1968. (Note the misspelling, which was ultimately corrected through correspondence with the publishers of Merriam-Webster dictionaries.) Since this label has now become widely adopted in the literature, it may be worthwhile to trace the history of its use.

A Dutch adult educator, Ger van Enckevort, has made an exhaustive study of the origins and use of the term *andragogy*. A summary of his findings follows.* The term (*andragogik*) was first coined, so far as he could discover, by a German grammar school teacher, Alexander Kapp, in 1833. Kapp used the word in a description of the educational theory of the Greek philosopher Plato, although Plato never used the term himself. A few years later the better-known German philosopher Johan Friedrich Herbart acknowledged the term by strongly opposing its use. Van Enckevort observes that "the great philosopher had more influence than the simple teacher, and so the word was forgotten and disappeared for nearly a hundred years."

Van Enckevort found the term used again in 1921 by the German social scientist Eugen Rosenstock, who taught at the Academy of Labor in Frankfort. In a report to the Academy in 1921 he expressed the opinion that adult education required special teachers, special methods, and a special philosophy. "It is not enough to translate the insights of education theory [or pedagogy] to the situation of adults . . . the teachers should be professionals who could cooperate with the pupils; only such a teacher can be, in contrast to a 'pedagogue,' an 'andragogue.'" Incidentally, Rosenstock believed that he invented the term until 1962, when he was informed of its earlier use by Kapp and Herbart. Van Enckevort reports that Rosenstock used the term on a number of occasions, and that it was picked up by some of his colleagues, but that it did not receive general recognition.

The Dutch scholar next finds the term used by a Swiss psychiatrist, Heinrich Hanselmann, in a book published in 1951, *Andragogy: Nature, Possibilities and Boundaries of Adult Education*, which dealt with the nonmedical treatment or reeducation of adults. Only six years later, in 1957, a German teacher, Franz Poggeler, published a book entitled *Introduction to Andragogy: Basic Issues in Adult Education*. About this time, other Europeans began using the term. In 1956, M. Ogrizovic published a dissertation in Yugoslavia on "penological andragogy," and in 1959 a book entitled *Problems of Andragogy*. Soon, other leading Yugoslavian adult educators,

*Ger van Enckevort, "Andragology: A New Science," Nederlands Centrum Voor Volksontwikkeling, Amersfoort, The Netherlands, April 1971 (mimeographed).

including Samolovcev, Filipovic, and Savicevic, began speaking and writing about andragogy, and faculties of andragogy offering doctorates in adult education were established at the universities of Zagreb and Belgrade in Yugoslavia and at the universities of Budapest and Debrecen in Hungary.

In the Netherlands, Professor T. T. ten Have began to use the term *andragogy* in his lectures in 1954. In 1959 he published the outline for a science of andragogy. Since 1966 the University of Amsterdam has had a doctorate for andragogues, and in 1970 a department of pedagogical and andragogical sciences was established in the faculty of social sciences. Current Dutch literature distinguishes between andragogy, andragogics, and andragology. *Andragogy* is any intentional and professionally guided activity that aims at a change in adult persons; *andragogics* is the background of methodological and ideological systems that govern the actual process of andragogy; and *andragology* is the scientific study of both andragogy and andragogics.

During the past decade, andragogy has increasingly been used by adult educators in France (Bertrand Schwartz), England (J. A. Simpson), Venezuela (Felix Adam), and Canada (a Bachelor of Andragogy degree program was established at Concordia University in Montreal in 1973).

To date, several major expositions of the theory of andragogy and its implications for practice have appeared in this country (e.g., Godbey, 1978; Ingalls and Arceri, 1972; Knowles, 1970, 1973, 1975, 1984b); a number of journal articles have been published reporting on applications of the andragogical framework to social work education, religious education, undergraduate and graduate education, management training, and other spheres; and an increasing volume of research on hypotheses derived from andragogical theory is being reported. There is a growing evidence, too, that the use of andragogical theory is making a difference in the way programs of adult education are being organized and operated, in the way teachers of adults are being trained, and in the way adults are being helped to learn. There is even evidence that concepts of andragogy are beginning to make an impact on the theory and practice of elementary, secondary, and collegiate education. *Andragogy in Action* (Knowles, 1984b) provides case descriptions of a variety of programs based on the andragogical model.

An Andragogical Theory of Adult Learning

Efforts to formulate a theory that considers what we know from experience and research about the unique characteristics of adult learners have been underway for more than five decades. An early attempt, *Informal Adult Education* (Knowles, 1950), organized ideas around the notion that adults learn best in informal, comfortable, flexible, nonthreatening settings. Then, in the mid-1960s a Yugoslavian adult educator attending a summer workshop at Boston University exposed participants to the term *andragogy,* and it seemed to be a more adequate organizing concept. It meant the art and science of helping adults learn, and was ostensibly the antithesis of the pedagogical model. (In fact, the subtitle of Knowles's 1970 edition of *The Modern Practice of Adult Education* was *Andragogy versus Pedagogy*.) Accordingly, an explanation of the meaning of pedagogy is required to fully elaborate on the meaning of andragogy.

First There Was Pedagogy

Pedagogy is derived from the Greek words *paid,* meaning "child" (the same stem from which "pediatrics" comes) and *agogus,* meaning "leader of." Thus, pedagogy literally means the art and science of teaching children. The pedagogical model of education is a set of beliefs. As viewed by many traditional teachers, it is an ideology based on assumptions about teaching and learning that evolved between the seventh and twelfth centuries in the monastic and cathedral schools of Europe out of their experience in teaching basic skills to young boys. As secular schools organized in later centuries, and public schools in the nineteenth century, the pedagogical model was the only existing educational model. Thus, the entire educational enterprise of U.S. schools, including higher education, was frozen into this model. Systematic efforts to establish adult education programs in this country, initiated after World War I, also used this model because it was the only model teachers had. As a result, until fairly recently, adults have by and large been taught as if they were children.

The pedagogical model assigns to the teacher full responsibility for making all decisions about what will be learned, how it will be learned, when it will be learned, and if it has been learned. It is

teacher-directed education, leaving to the learner only the submissive role of following a teacher's instructions. Thus, it is based on these assumptions about learners:

1. *The need to know*. Learners only need to know that they must learn what the teacher teaches if they want to pass and get promoted; they do not need to know how what they learn will apply to their lives.
2. *The learner's self-concept*. The teacher's concept of the learner is that of a dependent personality; therefore, the learner's self-concept eventually becomes that of a dependent personality.

As individuals mature, their need and capacity to be self-directing, to use their experience in learning, to identify their own readiness to learn, and to organize their learning around life problems increases steadily from infancy to preadolescence, and then increases rapidly during adolescence (see Bower and Hollister, 1967; Bruner, 1961b; Cross, 1981; Erikson, 1950, 1959, 1964; Getzels and Jackson, 1962; Iscoe and Stevenson, 1960; Smith, 1982; White, 1959).

In Figure 4-1 this rate of natural maturation is represented as a decrease in dependency (as represented by the solid line). Thus, pedagogical assumptions are realistic—and pedagogy is practiced appropriately—because of the high degree of dependency during the first year. Yet, the assumptions become decreasingly appropriate in the second, third, fourth, and subsequent years (as represented by the area with the vertical lines). Seemingly, U.S. culture (home, school, religious institutions, youth agencies, governmental systems) assumes, and therefore permits, a growth rate that is much slower (as represented by the broken line). Accordingly, pedagogy is practiced increasingly inappropriately (as represented by the shaded area between the solid and broken lines). The problem is that the culture does not nurture the development of the abilities required for self-direction, while the increasing need for self-direction continues to develop organically. The result is a growing gap between the need and the ability to be self-directing, which produces tension, resistance, resentment, and often rebellion in the individual.

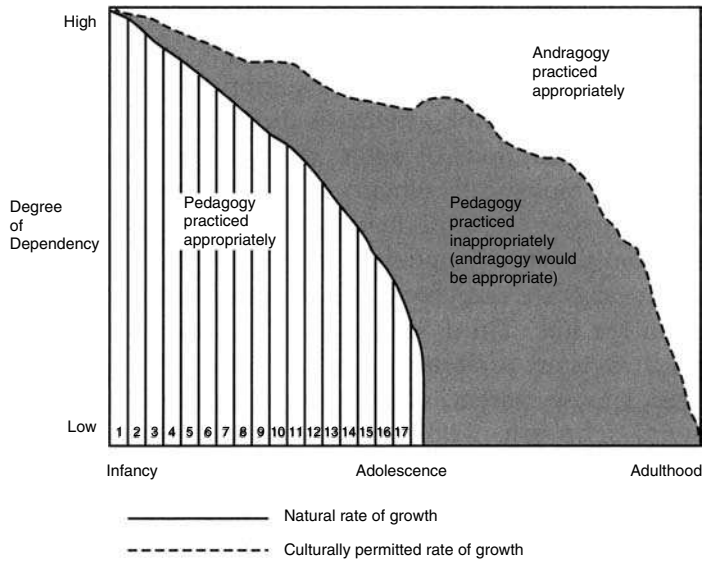

Figure 4-1. *The natural maturation toward self-direction as compared with the culturally permitted rate of growth of self-direction.*

3. *The role of experience*. The learner's experience is of little worth as a resource for learning; the experience that counts is that of the teacher, the textbook writer, and the audiovisual aids producer. Therefore, transmittal techniques (e.g., lectures, assigned readings, etc.) are the backbone of pedagogical methodology.
4. *Readiness to learn*. Learners become ready to learn what the teacher tells them they must learn if they want to pass and get promoted.
5. *Orientation to learning*. Learners have a subject-centered orientation to learning; they see learning as acquiring subject-matter content. Therefore, learning experiences are organized according to the logic of the subject-matter content.
6. *Motivation*. Learners are motivated to learn by external motivators (e.g., grades, the teacher's approval or disapproval, parental pressures).

And Then Came Andragogy

Before describing the andragogical assumptions about learners and learning, it is helpful to look at what is meant by "adult." There are at least four viable definitions of *adult*. First, the biological definition: Biologically, we become adults when we reach the age at which we can reproduce (i.e., in early adolescence). Second, the legal definition: Legally, we become adults when we reach the age at which the law says we can vote, get a driver's license, marry without consent, and the like. Third, the social definition: Socially, we become adults when we start performing adult roles, such as the role of full-time worker, spouse, parent, voting citizen, and the like. Finally, the psychological definition: Psychologically, we become adults when we arrive at a self-concept of being responsible for our own lives, of being self-directing. With regard to learning, it is the psychological definition that is most crucial. But it seems that the process of gaining a self-concept, of self-directedness, starts early in life and grows cumulatively as we biologically mature, start performing adult-like roles, and take increasing responsibility for making our own decisions. So, we become adults by degree as we move through childhood and adolescence, and the rate of increase by degree is probably accelerated if we live in homes, study in schools, and participate in youth organizations that foster our taking increasing responsibilities. But most of us probably do not have full-fledged self-concepts and self-directedness until we leave school or college, get a full-time job, marry, and start a family.

The Andragogical Model

The andragogical model is based on several assumptions that are different from those of the pedagogical model:

1. *The need to know*. Adults need to know why they need to learn something before undertaking to learn it. Tough (1979) found that when adults undertake to learn something on their own, they will invest considerable energy in probing into the benefits they will gain from learning it and the negative consequences of not learning it. Consequently, one of the new aphorisms in adult education is that the first task of the facilitator of learning is to help the learners become aware of the "need to know."

At the very least, facilitators can make an intellectual case for the value of the learning in improving the effectiveness of the learners' performance or the quality of their lives. Even more potent tools for raising the level of awareness of the need to know are real or simulated experiences in which the learners discover for themselves the gaps between where they are now and where they want to be. Personnel appraisal systems, job rotation, exposure to role models, and diagnostic performance assessments are examples of such tools. Paolo Freire, the great Brazilian adult educator, developed an elaborate process for what he calls the "consciousness-raising" of peasants in developing countries in his *The Pedagogy of the Oppressed* (1970).

2. *The learners' self-concept.* Adults have a self-concept of being responsible for their own decisions, for their own lives. Once they have arrived at that self-concept, they develop a deep psychological need to be seen by others and treated by others as being capable of self-direction. They resent and resist situations in which they feel others are imposing their wills on them. This presents a serious problem in adult education: The minute adults walk into an activity labeled "education," "training," or anything synonymous, they hark back to their conditioning in their previous school experience, put on their dunce hats of dependency, fold their arms, sit back, and say "teach me." This assumption of required dependency and the facilitator's subsequent treatment of adult students as children creates a conflict within them between their intellectual model—learner equals dependent—and the deeper, perhaps subconscious, psychological need to be self-directing. And the typical method of dealing with psychological conflict is to try to flee from the situation causing it, which probably accounts in part for the high dropout rate in much voluntary adult education. As adult educators become aware of this problem, they make efforts to create learning experiences in which adults are helped to make the transition from dependent to self-directing learners. *Self-Directed Learning: A Guide for Learners and Teachers* (Knowles, 1975) is a collection of such experiences.

3. *The role of the learners' experiences.* Adults come into an educational activity with both a greater volume and a different quality of experience from that of youths. By virtue of simply

having lived longer, they have accumulated more experience than they had as youths. But they also have had a different kind of experience. This difference in quantity and quality of experience has several consequences for adult education.

It assures that in any group of adults there will be a wider range of individual differences than is the case with a group of youths. Any group of adults will be more heterogeneous in terms of background, learning style, motivation, needs, interests, and goals than is true of a group of youths. Hence, greater emphasis in adult education is placed on individualization of teaching and learning strategies.

It also means that for many kinds of learning, the richest resources for learning reside in the adult learners themselves. Hence, the emphasis in adult education is on experiential techniques—techniques that tap into the experience of the learners, such as group discussions, simulation exercises, problem solving activities, case methods, and laboratory methods instead of transmittal techniques. Also, greater emphasis is placed on peer-helping activities.

But the fact of greater experience also has some potentially negative effects. As we accumulate experience, we tend to develop mental habits, biases, and presuppositions that tend to cause us to close our minds to new ideas, fresh perceptions, and alternative ways of thinking. Accordingly, adult educators try to discover ways to help adults examine their habits and biases and open their minds to new approaches. Sensitivity training, values clarification, meditation, and dogmatism scales are among the techniques that are used to tackle this problem.

There is another, more subtle reason for emphasizing the experience of the learners; it has to do with each learner's self-identity. Young children derive their self-identity largely from external definers—who their parents, bothers, sisters, and extended families are; where they live; and what churches and schools they attend. As they mature, they increasingly define themselves in terms of the experiences they have had. To children, experience is something that happens to them; to adults, experience is who they are. The implication of this fact for adult education is that in any situation in which the participants'

experiences are ignored or devalued, adults will perceive this as rejecting not only their experience, but rejecting themselves as persons.

4. *Readiness to learn*. Adults become ready to learn those things they need to know and be able to do in order to cope effectively with their real-life situations. An especially rich source of "readiness to learn" is the developmental tasks associated with moving from one developmental stage to the next. The critical implication of this assumption is the importance of timing learning experiences to coincide with those developmental tasks. For example, a sophomore girl in high school is not ready to learn about infant nutrition or marital relations, but let her get engaged after graduation and she will be very ready.

   Bench workers are not ready for a course in supervisory training until they have mastered doing the work they will supervise and have decided that they are ready for more responsibility.

   It is not necessary to sit by passively and wait for readiness to develop naturally, however. There are ways to induce readiness through exposure to models of superior performance, career counseling, simulation exercises, and other techniques.

5. *Orientation to learning*. In contrast to children's and youths' subject-centered orientation to learning (at least in school), adults are life-centered (or task-centered or problem-centered) in their orientation to learning. Adults are motivated to learn to the extent that they perceive that learning will help them perform tasks or deal with problems that they confront in their life situations. Furthermore, they learn new knowledge, understandings, skills, values, and attitudes most effectively when they are presented in the context of application to real-life situations.

   This point is so critical that reinforcement is required:

   For many years, educators sought to reduce illiteracy in this country by teaching courses in reading, writing, and arithmetic, and our record was terribly disappointing. The dropout rate was high, motivation to study was low, and achievement scores were poor. When researchers started to discover what was wrong, they quickly found that the words presented in the standard

vocabulary lists in the reading and writing courses were not the words these people used in their life situations and that the mathematical problems presented in their arithmetic courses were not the problems they had to be able to solve when they went to the store, the bank, or the shop. As a result, new curricula organized around life situations and the acquisition of coping skills (e.g., coping with the world of work, of local government and community services, of health, of the family, of consuming) were constructed. Many of the problems encountered in the traditional courses disappeared or were greatly educed.

A second example is from university extension courses. For many years, it was the practice of universities to offer late afternoon or evening courses for adults that were exactly the same courses taught to teenagers in the day. Then in the 1950s, the evening programs changed. A course titled "Composition I" in the day program became "Writing Better Business Letters" in the evening program; "Composition II" became "Writing for Pleasure and Profit"; and "Composition III" became "Improving Your Professional Communications." And it wasn't just the titles that changed; the way the courses were taught also changed. While students in "Composition I" still memorized rules of grammar, students in "Writing Better Business Letters" immediately began writing business letters and then extracted principles of grammatical writing from an analysis of what they had written.

6. *Motivation*. Adults are responsive to some external motivators (better jobs, promotions, higher salaries, and the like), but the most potent motivators are internal pressures (the desire for increased job satisfaction, self-esteem, quality of life, and the like). Tough (1979) found in his research that all normal adults are motivated to keep growing and developing, but this motivation is frequently blocked by such barriers as negative self-concept as a student, inaccessibility of opportunities or resources, time constraints, and programs that violate principles of adult learning.

It is important to note that the number of assumptions has grown from 4 to 6 over the years. Originally, andragogy presented four assumptions (shown here as numbers 2-5; Knowles, 1975, 1978,

1980). Assumption number 6, motivation to learn, was added in 1984 (Knowles, 1984a), and assumption number 1, the need to know, in more recent years (Knowles, 1989, 1990).

Putting the Pedagogical and Andragogical Models in Perspective

So far, the treatment of these two models may suggest that they are antithetical, that pedagogy is bad and andragogy is good, and that pedagogy is for children and andragogy is for adults. This is pretty much the way the models were presented in the first edition of *The Modern Practice of Adult Education: Andragogy versus Pedagogy* (Knowles, 1970). But during the next decade, a number of teachers in elementary and secondary schools and in colleges reported that they were experimenting with applying the andragogical model, and that children and youths seemed to learn better in many circumstances when some features of the andragogical model were applied. So, in the revised edition of *The Modern Practice of Adult Education* (1980), the subtitle was changed to *From Pedagogy to Andragogy*. Also, a number of trainers and teachers of adults described situations in which they found that the andragogical model did not work.

Therefore, putting the two models into perspective requires making a distinction between an ideology and a system of alternative assumptions. It seems that the pedagogical model has taken on many of the characteristics of ideology, ideology being defined as a systematic body of beliefs that requires loyalty and conformity by its adherents. Consequently, teachers often feel pressure from the educational system to adhere to the pedagogical mode. For example, the best motivator of performance, teachers are told, is competition for grades; therefore, grades must be on a curve of normal distribution—only so many "A"s are allowed and there must be some failures. The pedagogical ideology is typically sanctified by the shibboleth "academic standards." (Giving too many "A"s violates academic standards.)

What this means in practice is that we educators now have the responsibility to check out which assumptions are realistic in a given situation. If a pedagogical assumption is realistic for a particular learner in regard to a particular learning goal, then a pedagogical strategy is appropriate, at least as a starting point. Examples of this

occur when learners are indeed dependent (such as when entering into a totally strange content area), when they have in fact had no previous experience with a content area, when they do not understand the relevance of a content area to their life tasks or problems, when they do need to accumulate a given body of subject matter in order to accomplish a required performance, and when they feel no internal need to learn that content. But there is one big difference between how an ideological pedagog and an andragog would go from here. The pedagog, perceiving the pedagogical assumptions to be the only realistic assumptions, will insist that the learners remain dependent on the teacher. On the other had, the andragog, perceiving that movement toward the andragogical assumptions is a desirable goal, will do everything possible to help the learners take increasing responsibility for their own learning.

Even dyed-in-the-wool pedagogical instructors have reported that their teaching became more effective when they adapted some of the andragogical concepts to the pedagogical model. Some ways they do this are by providing a climate in which the learners feel more respected, trusted, unthreatened, and cared about; by exposing them to the need to know before instructing them; by giving them some responsibility in choosing methods and resources; and by involving them in sharing responsibility for evaluating their learning.

Chapter 6 explores the implications for applying these assumptions to planning and conducting programs of adult education and human resources development.

Chapter Summary

Despite the fact that educating adults has been a concern for centuries, there has been relatively little research in the area of adult learning until recently. Only after World War I did a growing body of assumptions about the unique characteristics of adult learners emerge. Within the study of adult learning, there are two streams of inquiry, scientific and artistic, that are distinguishable. Initiated by Thorndike, the scientific stream uses rigorous investigation to discover new information. In contrast, the artistic stream, launched by Lindeman's *The Meaning of Adult Education*, uses intuition and analysis of experience to discover new information. A pioneering theorist, Lindeman laid the foundation for a systematic theory of

adult education and identified key assumptions about adult learners. These include the following concepts: Adults are motivated to learn as they experience needs and interests that learning will satisfy; adults' orientation to learning is life-centered; experience is the richest resource for adults' learning; adults have a deep need to be self-directing; and individual differences among people increase with age.

Subsequent to the 1926 publication of *The Meaning of Adult Education*, interest in the field became evident and other related articles began appearing in the *Journal of Adult Education*. By 1940, most of the elements required for a conceptualization of adult learning had been discovered. However, these fragmented elements were not yet incorporated into an integrated framework. During the 1950s, the social sciences seized on adult learning and more intensive research began. These social science disciplines include clinical psychology, developmental psychology, sociology and social psychology, and philosophy. Noted clinical psychologists such as Freud, Jung, Erikson, Maslow, and Rogers made significant contributions to the study of adult learning. Freud identified the influence of the subconscious on behavior; Jung introduced the idea that human consciousness possesses four functions: sensation, thought, emotion, and intuition; Erikson provided the "eight ages of man"; Maslow emphasized the importance of safety; and Rogers conceptualized a student-centered approach to education based on five "basic hypotheses." Developmental psychologists provided knowledge of characteristics associated with age (i.e., physical capabilities, mental abilities, interests, attitudes, values, creativity, and life styles), whereas sociology and social psychology provided knowledge about group and social system behavior, including factors that facilitate or inhibit learning.

The label and concept of andragogy greatly enhanced the efforts to create a conceptual framework of adult learning. Although the term was first used in 1833, Americans were not introduced to it until 1967. Since then, a number of journal articles have reported on applications of the andragogical frameworks to social work education, religious education, undergraduate and graduate education, management training, and other spheres; and there is an increasing volume of research on hypotheses derived from the andragogical model.

A distinction between the concepts of pedagogy and andragogy is required to fully grasp the concept of andragogy. The pedagogical

model, designed for teaching children, assigns to the teacher full responsibility for all decision making about the learning content, method, timing, and evaluation. Learners play a submissive role in the educational dynamics. In contrast, the andragogical model focuses on the education of adults and is based on the following precepts: adults need to know why they need to learn something; adults maintain the concept of responsibility for their own decisions, their own lives; adults enter the educational activity with a greater volume and more varied experiences than do children; adults have a readiness to learn those things that they need to know in order to cope effectively with real-life situations; adults are life-centered in their orientation to learning; and adults are more responsive to internal motivators than external motivators. The pedagogical model is an ideological model that excludes the andragogical assumptions. The andragogical model is a system of assumptions that includes that pedagogical assumptions. The andragogical model is not an ideology; it is a system of alternative sets of assumptions, a *transactional* model that speaks to those characteristics of the learning situation.

Reflection Questions

4.1 From your own experience, think of a situation that clearly illustrates pedagogy and one for andragogy.

4.2 Reflect on one of Lindeman's five key assumptions about adult learners.

4.3 How has clinical psychology contributed to andragogy?

4.4 How has adult education contributed to andragogy?

4.5 How does the andragogical model fit with your own learning style?

CHAPTER 5

Theories of Teaching

Principles of Teaching from Theories of Learning

Typically, theories of learning are only useful to adult learning practitioners when they are somehow applied to the facilitation of learning—a function assigned usually in our society to a person designated as teacher.

A distinction must be made between theories of learning and theories of teaching. Theories of learning deal with the ways in which an organism learns, whereas theories of teaching deal with the ways in which a person influences an organism to learn (Gage, 1972, p. 56).

Presumably, the learning theory subscribed to by a teacher will influence his or her teaching theory.

Hilgard, resisting this fragmentation of learning theory, identified 20 principles he believed to be universally acceptable from three different families of theories: *Stimulus-Response (S-R) theory*, *cognitive theory*, and *motivation and personality theory*. These principles are summarized in Table 5-1.

It is important for us to note Hilgard's conviction in his belief that his 20 principles would be "in large part acceptable to all parties"—a conviction that is grounded in his verification process. Hilgard limited the "parties" with whom he checked out these principles to control-oriented theorists. In spite of their differences about the internal mechanics of learning, these theorists are fairly close in their conceptualization of the role of the teacher.

Table 5-1
Summary of Hilgard's Principles

Principles emphasized in S-R theory	1. The learner should be an *active*, rather than a passive listener or viewer. 2. *Frequency of repetition* is still important in acquiring skill and for retention through overlearning. 3. *Reinforcement* is important; that is, repetition's desirable and correct responses should be rewarded. 4. *Generalization* and *discrimination* suggest the importance of practice in varied contexts, so that learning will become (or remain) appropriate to a wider (or more restricted) range of stimuli. 5. *Novelty* in behavior can be enhanced through imitation of models, through cueing, through shaping, and is not inconsistent with a liberalized S-R approach. 6. *Drive* is important in learning, but all personal-social motives do not conform to the drive-reduction principles based on food-deprivation experiments. 7. *Conflicts and frustrations* arise inevitably in the process of learning difficult discriminations and in social situations in which irrelevant motives may be aroused. Hence we must recognize and provide for their resolution or accommodation.
Principles emphasized in cognitive theory	1. *The perceptual features* of the problems given the learner are important conditions of learning figure-ground relations, directional signs, sequence, organic interrelatedness. Hence a learning problem should be so structured and presented that the essential features are open to the inspection of the learner. 2. *The organization of knowledge* should be an essential concern of the teacher or educational planner so that the direction from simple to complex is not from arbitrary, meaningless parts to meaningful wholes, but instead from simplified wholes to more complex wholes. 3. Learning *is culturally relative*, and both the wider culture and the subculture to which the learner belongs may affect his learning.

4. *Cognitive feedback* confirms correct knowledge and corrects faulty learning. The learner tries something provisionally and then accepts or rejects what he/she does on the basis of its consequences. This is, of course, the cognitive equivalent of reinforcement in S-R theory, but cognitive theory tends to place more emphasis upon a kind of hypothesis testing through feedback.
5. *Goal-setting* by the learner is important as motivation for learning and personal successes and failures determine how individuals set future goals.

Principles from motivation and personality theory

1. The learner's *abilities* are important, and provisions have to be made for slower and more rapid learner, as well as for those with specialized abilities.
2. *Postnatal development* may be as important as hereditary and congenital determiners of ability and interest. Hence, the learner must be understood in terms of the influences that have shaped his/her development.
3. Learning is *culturally relative*, and both the wider culture and the subculture to which the learner belongs may affect learning.
4. *Anxiety level* of the individual learner may determine the beneficial or detrimental effects of certain kinds of encouragements to learn.
5. The same objective situation may tap *appropriate motives* for one learner and not for another, as for example, in the contrast between those motivated be affiliation and those motivated by achievement.
6. The *organization of motives and values* within the individual is relevant. Some long-range goals affect short-range activities. Thus college students of equal ability may do better in courses perceived as relevant to their majors than in those perceived as irrelevant.
7. The *group atmosphere* of learning (competition vs cooperation, authoritarianism vs democracy, individual isolation vs group identification) will affect satisfaction in learning as well as the products of learning (Hilgard and Bower, 1966, pp. 562–564).

TEACHING CONCEPTS DERIVED FROM LEARNING THEORIES ABOUT ANIMALS AND CHILDREN

Let's examine the concepts of a variety of theories about the nature of teaching and the role of the teacher. First, we'll look at the members of Hilgard's jury. These include Thorndike, Guthrie, Skinner, Hull, Tolman, and Gagne.

Thorndike essentially saw teaching as the control of learning by the management of reward. The teacher and learner must know the characteristics of a good performance in order that practice may be appropriately arranged. Errors must be diagnosed so that they will not be repeated. The teacher is not primarily concerned with the internal states of the organism, but with structuring the situation so that rewards will operate to strengthen desired responses. The learner should be interested, problem-oriented, and attentive. However, the best way to obtain these conditions is to manipulate the learning situation so that the learner accepts the problem posed because of the rewards involved. Attention is maintained and appropriate stimulus-response connections are strengthened through the precise application of rewards toward the goals set by the teacher. A teacher's role is to cause appropriate S-R bonds to be built up in the learner's behavior repertoire (Hilgard and Bower, 1966, pp. 22–23; Pittenger and Gooding, 1971, pp. 82–83).

Hilgard summarizes Guthrie's suggestions for teaching as follows:

1. If you wish to encourage a particular kind of behavior or discourage another, *discover the cues leading to the behavior in question*. In the one case, arrange the situation so that the desired behavior occurs when those cues are present; in the other case, arrange it so that the undesired behavior does not occur in the presence of the cues. This is all that is involved in the skillful use of reward and punishment. A student does not learn what was in a lecture or a book. He learns only what the lecture or book caused him to do.
2. *Use as many stimulus supports for desired behavior as possible*, because any ordinary behavior is a complex of movements to a complex of stimuli. The more stimuli there are associated with

> the desired behavior, the less likely that distracting stimuli and competing behavior will upset the desirable behavior (Hilgard and Bower, 1966, pp. 86–87).

From Skinner's (1968) vantage point, "Teaching is simply the arrangement of contingencies of reinforcement" (p. 5). Subsequent statements in *The Technology of Teaching* throw further light on his position:

> Some promising advances have recently been made in the field of learning. Special techniques have been designed to arrange what are called *contingencies of reinforcement*—the relations which prevail between behavior on the one hand and the consequences of behavior on the other—with the result that a much more effective control of behavior has been achieved. (p. 9)

> Comparable results have been obtained with pigeons, rats, dogs, monkeys, human children and psychotic subjects. In spite of great phylogenic differences, all these organisms show amazingly similar properties of the learning process. It could be emphasized that this has been achieved by analyzing the effects of reinforcement with considerable precision. Only in this way can the behavior of the individual organism be brought under such precise control. (p. 14)

> The human organism does, of course, learn without being taught. It is a good thing that this is so, and it would no doubt be a good thing if more could be learned in that way. . . . But discovery is no solution to the problems of education. A culture is no stronger than its capacity to transmit itself. It must impart an accumulation of skills, knowledge, and social and ethical practices to its new members. The institution of education is designed to serve this purpose. . . . It is dangerous to suggest to the student that it is beneath his dignity to learn what others already know, that there is something ignoble (and even destructive of "rational powers") in memorizing facts, codes, formulae, or passages from literary works, and that to be admired he must think in original ways. It is equally dangerous to forego teaching important facts and principles in order to give the student a chance to discover them for himself. (p. 110)

Hull was primarily concerned with the development of a systematic behavior theory that would improve the laboratory study of learning, and so he gave little attention to its implications for teaching. In assessing the significance of his work for education, Kingsley and Garry (1957) point out:

> Systematic order and arrangement would characterize the classroom patterned after Hull's theory. The development of habits and skills would proceed from the simple to the complex with a clear understanding of the stimuli and responses to be associated. The program would have to be dynamic and stimulating in view of the central position that reinforcement holds, inasmuch as aroused drives which can be reduced by satisfying outcomes are an essential condition of learning. . . . Practice would be presented for the purpose of building the desired habits and maintaining them, but would not proceed to the point at which the increase in inhibition from repeating the same response would make the child reluctant to respond. (pp. 104–105)

Tolman was also principally concerned with the laboratory study of learning, and Kingsley and Garry (1957) point out that "the fact that Tolman accepts different forms of learning makes it more difficult to infer how an educational program which followed his theory literally would operate." But the teacher's task would be concerned primarily with "the creating of stimulus-conditions which make it possible for the learner to perceive clearly what leads to what, and to understand the different means by which a given goal can be reached. Emphasis would be placed upon making vivid the relationships between the parts and the whole. . . . Because of variations in capacity with age, previous experience, etc., it would be necessary to select learning tasks which can be perceived as wholes" (pp. 119–120).

The gestalt psychologists saw the teacher's task as being essentially to help the individual see significant relationships and to manage instruction in order to organize his or her experiences into functional patterns. Through verbal explanations, showing pictures, putting words on chalkboards, presenting reading matter, and many other teaching activities, the teacher provides stimulating situations.

For this reason, careful lesson planning with due regard for suitable arrangement and orderly presentation is essential for good

teaching. Practices conducive to the establishment of appropriate relations and organization include starting with the familiar, basing each step on those already taken, putting together facts that belong together, grouping items according to their natural connections, placing subtopics under the topic to which they belong, using illustrations based on the learner's experience, giving major emphasis to essentials, centering supporting details around the main points, and avoiding irrelevant details (Kingsley and Garry, 1957, pp. 111–112). Furthermore, all the divisions and topics of each subject must be integrated, and all the various subjects of a course or program must be related to one another.

Robert Gagne in *The Conditions of Learning* (1965) agrees with these learning theorists that teaching means the arranging of conditions that are external to the learner (p. 26), but he disagrees that learning is a phenomenon that can be explained by simple theories. He believes that there are eight distinct types of learning, each with its own set of required conditions. These are summarized in Table 5-2.

Gagne (1965) further believes that the most important class of conditions that distinguishes one form of learning from another is its prerequisites, since the types are in hierarchical order, as follows:

> Problem solving (type 8) requires as prerequisites:
>
> Principles (type 7), which require as prerequisites:
>
> Concepts (type 6), which require as prerequisites:
>
> Multiple discriminations (type 5), which require as prerequisites:
>
> Verbal associations (type 4) or other chains (type 3), which require as prerequisites:
>
> Stimulus-response connections (type 2). (p. 60)

Gagne specifies eight component functions of the instructional situation that represent the ways in which the learner's environment acts on him and that must be managed by the teacher:

1. *Presenting the stimulus.* Every type of learning requires a stimulus, and usually these stimuli must be located within the learning environment, outside the learner. If a chain is being learned, an external cue must be provided for each link, even though

Table 5-2
Gagne's Eight Distinctive Types of Learning

Type 1	*Signal Learning*. The individual learns to make a general, diffuse response to a signal. This is the classical conditioned response of Pavlov.
Type 2	*Stimulus-Response Learning*. The learner acquires a precise response to a discriminated stimulus. What is learned is a connection (Thorndike) or a discriminated operant (Skinner), sometimes called an instrumental response (Kimble).
Type 3	*Chaining*. What is acquired is a chain of two or more stimulus-response connections. The conditions for such learning have been described by Skinner and others.
Type 4	*Verbal Association*. Verbal association is the learning of chains that are verbal. Basically, the conditions resemble those for other (motor) chains. However, the presence of language in the human being makes this a special type because internal links may be selected from the individual's previously learned repertoire of language.
Type 5	*Multiple Discrimination*. The individual learns to make different identifying responses to as many different stimuli, which may resemble each other in physical appearance to a greater or lesser degree.
Type 6	*Concept Learning*. The learner acquires a capability to make a common response to a class of stimuli that may differ from each other widely in physical appearance. He or she is able to make a response that identifies an entire class of objects or events.
Type 7	*Principle Learning*. In simplest terms, a principle is a chain of two or more concepts. It functions to control behavior in the manner suggested by a verbalized rule of the form "If A, then B," which, of course, may also be learned as Type 4.
Type 8	*Problem Solving*. Problem solving is a kind of learning that requires the internal events usually called thinking. Two or more previously acquired principles are somehow combined to produce a new capability that can be shown to depend on a "higher-order" principle (pp. 58-59).

these may become unnecessary later. If multiple discrimination is to be accomplished, the stimuli to be discriminated must be displayed so that correct connections can become differentiated from incorrect ones. If concepts are being learned, a suitable variety of objects or events representing a class must be displayed. If principles are being acquired, the stimulus objects to which they are expected to apply must somehow be represented to the student. And if problem solving is undertaken, the "problem situation" must similarly be represented in many different ways by objects already in the learner's environment, or by means of pictures, printed books, or oral communication.

2. *Directing attention and other learner activities*. Environmental components also act on the learner by directing attention to certain stimuli or aspects of stimulus objects and events. In very young children, vivid or suddenly changing stimulation may be used for this purpose. Very soon these can be supplanted by oral commands, and later still by printed directions such as, "Notice the number of electrons in the outer ring," or "Look at the graph in Figure 23." As implied by the statements, "Remember how a line is defined," or "Complete the following sentence," activities other than attention may also be directed by such instructions. These activities are not themselves learning. They are simply actions that must be taken by the learner in order to create the proper conditions for learning. Verbal directions that have these purposes can be presented either orally or in printed form.
3. *Providing a model for terminal performance*. The importance of the function of informing the learner about the general nature of the performance to be acquired has been emphasized previously on several occasions. There is no single way to do this, and many different components of the instructional situation may be employed. Most commonly, the "model" of performance to be expected following learning is conveyed by oral or printed communication.
4. *Furnishing external prompts*. In learning chains, as well as multiple discriminations, cues may be provided in the instructional situation to establish a proper sequence of connections or to increase the distinctiveness of stimuli. As learning proceeds, these extra cues may be made to "vanish" when they are no

longer needed. Stimuli that function as extra cues may take a variety of forms. For example, they may be pictorial, as when a sequence is depicted in a diagram reading from left to right. Or they may be auditory, as in emphasizing the differences in sound of such French words as *rue* and *rouge*. Verbal stimuli are often employed for both these purposes, as well as for the purpose of furnishing distinctive "coding links" in verbal chains. For example, when learning color coding for resistors, the word *penny* is used to link "brown" and "one"; the word *nothingness* is used to link "black" and "zero."

5. *Guiding the direction of thinking.* When principles are being learned, and particularly when learning takes the form of problem solving, instructions from the learner's environment may guide the direction of recalled internal connections (thoughts). As described previously, such guidance is presumed to increase the efficiency of learning by reducing the occurrence of irrelevant "hypotheses." Generally, instructions having this function of "hinting" and "suggesting" take the form of oral or printed prose statements.
6. *Inducing transfer of knowledge.* Transferring learned concepts and principles to novel situations may be accomplished in a number of ways. Discussion is one of the most convenient. Obviously, this is a special kind of interaction between the learner and his environment, and it is not possible to specify exactly what form of discussion will be taken at any given moment by stimulation form the environment. The process is usually initiated, however, by verbally stated questions of the "problem-solving" variety. An important alternative method is to more or less directly place the individual within a problem situation, without the use of words to describe it. A science demonstration may be used to serve this function. Also, videos can be used with considerable effectiveness to initiate problem-solving discussion by "getting the students into the situation" in a highly realistic manner.
7. *Assessing learning attainments.* The environment of the learner also acts to assess the extent to which the individual has attained a specific learning objective or subobjective. It does this by deliberately placing the learner in representative problem situations that concretely reflect the capability the individ-

ual is expected to have learned. Most frequently, this is done by asking questions. Although it is conceivable for the learner to formulate for himself or herself the questions to be asked, this is difficult for even the experienced adult learner. Preferably, the questions must come from an independent source, to ensure that they will be uninfluenced by the learner's wishes, but will accurately represent the objective.

8. *Providing feedback*. Feedback concerning the correctness of the learner's responses is closely related to assessment of learning outcomes. The questions that are asked of the learner, followed by his or her answers, must in turn be followed by information that lets the learner know whether he or she is right or wrong. Sometimes, this feedback from the learner's environment is very simple to arrange: a foreign word pronounced by the student may sound like one heard on a tape, or the color of a chemical solution may indicate the presence of an element being sought. At other times, it may be considerably more complex, as, for example, when the adequacy of a constructed prose paragraph describing an observed event is assessed, and the results are fed back to the learner.

These eight functions, then, represent the ways in which the learner's environment acts on the individual. These are the external conditions of learning that, when combined with certain prerequisite capabilities within the learner, bring about the desired change in performance. Obviously, there are many ways to establish these conditions in the learning environment, and many combinations of objects, devices, and verbal communications may be employed in doing so. Probably the most important consideration for the design of the learning environment, however, is not that several alternative ways of accomplishing the same function are usually available. Rather, the important point is that for a given function, certain means of interacting with the learner are quite ineffective. Accordingly, the characteristics of various media of instruction in performing these functions need to be considered carefully in making a choice (Gagne, 1965, pp. 268–271).

The learning theorists described above are the ones Hilgard believed would agree with his 20 principles (with the exception of the motivation and personality theorists, whom Hilgard didn't identify,

so we can't check with them directly). Obviously these theorists are unanimous in seeing teaching as the management of procedures that will assure specified behavioral changes as prescribed learning products. The role of the teacher, therefore, is that of a behavior shaper. Stated this baldly, it smacks of what contemporary critics of education see as a God-playing role (Bereiter, 1972, p. 25; Illich, 1970, p. 30).

TEACHING CONCEPTS DERIVED FROM LEARNING THEORIES OF ADULTS

When we look at the concepts of teaching of those theorists who derived their theories of learning primarily from studies of adults, it is obvious that they are very different from those discussed in the previous section. Carl Rogers (1969) makes one of the sharpest breaks in his lead statement:

> Teaching, in my estimation, is a vastly over-rated function. Having made such a statement, I scurry to the dictionary to see if I really mean what I say. Teaching means "to instruct." Personally I am not much interested in instructing another in what he should know or think. "To impart knowledge or skill." My reaction is, why not be more efficient, using a book or programmed learning? "To make to know." Here my hackles rise. I have no wish to make anyone know something. "To show, guide, direct." As I see it, too many people have been shown, guided, directed. So I come to the conclusion that I do mean what I said. Teaching is, for me, a relatively unimportant and vastly overvalued activity. (p. 103)

Rogers (1969) goes on to explain that in his view teaching and the imparting of knowledge make sense in an unchanging environment, which is why it has been an unquestioned function for centuries. "But if there is one truth about modern man, it is that he lives in an environment which is continually changing," and therefore, the aim of education must be the facilitation of learning (pp. 104–105). He defines the role of the teacher as that of a facilitator of learning. The critical element in performing this role is the personal relationship between the facilitator and the learner, which in turn is dependent on

the facilitator's possessing three attitudinal qualities: (1) realness or genuineness; (2) nonpossessive caring, prizing, trust, and respect; and (3) empathic understanding and sensitive and accurate listening (pp. 106–206). Rogers provides the following guidelines for a facilitator of learning (pp. 164–166):

1. The facilitator has much to do with setting the initial mood or climate of the group or class experience. If the facilitator's own basic philosophy is one of trust in the group and in the individuals who compose the group, then this point of view will be communicated in many subtle ways.
2. The facilitator helps to elicit and clarify the purposes of the individuals in the class as well as the more general purposes of the group. If he or she is not fearful of accepting contradictory purposes and conflicting aims, and is able to permit the individuals a sense of freedom in stating what they would like to do, then the facilitator is helping to create a climate for learning.
3. The facilitator relies on the desire of each student to implement those purposes that have meaning for him or her as the motivational force behind significant learning. Even if the desire of the student is to be guided and led by someone else, the facilitator can accept such a need and motive and can either serve as a guide when this is desired or can provide some other means, such as a set course of study, for the student whose major desire is to be dependent. And, for the majority of students, the facilitator can help to use a particular individual's own drives and purposes as the moving force behind his or her learning.
4. The facilitator endeavors to organize and make easily available the widest possible range of resources for learning. He or she strives to make available writings, materials, psychological aids, persons, equipment, trips, audiovisual aids—every conceivable resource that his or her students may wish to use for their own enhancement and for the fulfillment of their own purposes.
5. The facilitator regards himself or herself as a flexible resource to be used by the group. The facilitator does not downgrade himself or herself as a resource. He or she is available as a

counselor, lecturer, and advisor, a person with experience in the field. The facilitator wishes to be used by individual students and by the group in ways that seem most meaningful to them insofar as he or she can be comfortable in operating in the ways they wish.

6. In responding to expressions in the classroom group, the facilitator accepts both intellectual content and the emotionalized attitudes, endeavoring to give each aspect the approximate degree of emphasis that it has for the individual or the group. Insofar as the facilitator can be genuine in doing so, he or she accepts rationalizations and intellectualizing, as well as deep and real personal feelings.

7. As the acceptant classroom climate becomes established, the facilitator is increasingly able to become a participant learner, a member of the group, expressing his or her views as those of one individual only.

8. The facilitator takes the initiative in sharing his or her feelings as well as thoughts with the group—in ways that do not demand or impose but represent simply the personal sharing that students may take or leave. Thus, the facilitator is free to express his or her own feelings in giving feedback to students, in reacting to them as individuals, and in sharing personal satisfactions or disappointments. In such expressions it is the facilitator's "owned" attitudes that are shared, not judgments of evaluations of others.

9. Throughout the classroom experience, the facilitator remains alert to the expressions indicative of deep or strong feelings. These may be feelings of conflict, pain, and the like, which exist primarily within the individual. Here, the facilitator endeavors to understand these from the person's point of view and to communicate his or her empathic understanding. On the other hand, the feelings may be those of anger, scorn, affection, rivalry, and the like—interpersonal attitudes among members of the groups. Again, the facilitator is as alert to these feelings, and by his or her acceptance of such tensions or bonds he or she helps to bring them into the open for constructive understanding and use by the group.

10. In this functioning as a facilitator of learning, the leader endeavors to recognize and accept his or her own limitations. The facilitator realizes that he or she can grant freedom to students only to the extent that he or she is comfortable in giving such freedom. The facilitator can be understanding only to the extent that he or she actually desires to enter the inner world of students. The facilitator can share himself or herself only to the extent that he or she is reasonably comfortable in taking that risk. The facilitator can participate as a member of the group only when the facilitator actually feels that he or she and the students have an equality as learners. The facilitator can exhibit trust of the students' desire to learn only insofar as he or she feels that trust. There will be many times when the facilitator's attitudes are not facilitative of learning. He or she will feel suspicious of the students, or will find it impossible to accept attitudes that differ strongly from his or her own, or will be unable to understand some of the student feelings that are markedly different from his or her own, or feel strongly judgmental and evaluative. When the facilitator experiences nonfacilitative attitudes, he or she will endeavor to get close to the them, to be clearly aware of them, and to state them just as they are within himself or herself. Once the facilitator has expressed these angers, these judgments, these mistrusts, these doubts of others and doubts of self as something coming from within himself or herself, not as objective facts in outward reality, he or she will find the air cleared for a significant interchange with his or her students. Such an interchange can go a long way toward resolving the very attitudes that he or she has been experiencing, and thus make it possible to be more of a facilitator of learning (Rogers, 1969, pp. 164–166).

Although Maslow does not spell out his conception of the role of teacher, he no doubt would subscribe to Rogers' guidelines, with perhaps a bit more emphasis on the teacher's responsibility for providing safety. Several followers of Rogers and Maslow have experimented with translating their theories into classroom behavior. George Brown, for example, describes the development of confluent education ("the term for the integration or flowing together of the affective and cognitive elements in individual and group learning")

in the Ford-Esalen Project in Affective Education in California in the late 1960s in his *Human Teaching for Human Learning* (1971). Elizabeth Drews describes an experiment to test a new program designed to foster self-initiated learning and self-actualization in ninth-graders in Michigan in which the teachers defined their roles as facilitators of learning (Drews, 1966).

Flowing in the same stream of thought, Goodwin Watson (1960-61) provides the following summary of "what is known about learning," which is easily read as "guidelines for the facilitation of learning":

1. Behavior which is rewarded—from the learner's point of view—is more likely to recur.
2. Sheer repetition without reward is a poor way to learn.
3. Threat and punishment have variable effects upon learning, but they can and do commonly produce avoidance behavior in which the reward is the diminution of punishment possibilities.
4. How "ready" we are to learn something new is contingent upon the confluence of diverse—and changing—factors, some of which include:
    a. adequate existing experience to permit the new to be learned (we can learn only in relation to what we already know);
    b. adequate significance and relevance for the learner to engage in learning activity (we learn only what is appropriate to our purposes);
    c. freedom from discouragement, the expectation of failure, or threats to physical, emotional, or intellectual well-being.
5. Whatever is to be learned will remain unlearnable if we believe that we cannot learn it or if we perceive it as irrelevant or if the learning situation is perceived as threatening.
6. Novelty (per 4 and 5 above) is generally rewarding.
7. We learn best that which we participate in selecting and planning ourselves.
8. Genuine participation (as compared with feigned participation intended to avoid punishment) intensifies motivation, flexibility, and rate of learning.

9. An autocratic atmosphere (produced by a dominating teacher who controls direction via intricate punishments) produces in learners apathetic conformity, various—and frequently devious—kinds of defiance, scapegoating (venting hostility generated by the repressive atmosphere on colleagues), or escape. . . . An autocratic atmosphere also produces increasing dependence upon the authority, with consequent obsequiousness, anxiety, shyness, and acquiescence.
10. "Closed," authoritarian environments (such as are characteristic of most conventional schools and classrooms) condemn most learners to continuing criticism, sarcasm, discouragement, and failure so that self-confidence, aspiration (for anything but escape), and a healthy self-concept are destroyed.
11. The best time to learn anything is when whatever is to be learned is immediately useful to us.
12. An "open," nonauthoritarian atmosphere can, then, be seen as conductive to learner initiative and creativity, encouraging the learning of attitudes of self-confidence, originality, self-reliance, enterprise, and independence. All of which is equivalent to learning how to learn.

Houle (1972, pp. 32–39) has proposed a "fundamental system" of educational design that rests on seven assumptions:

1. Any episode of learning occurs in a specific situation and is profoundly influenced by that fact.
2. The analysis or planning of educational activities must be based on the realities of human experience and on their constant change.
3. Education is a practical art (like architecture) that draws on many theoretical disciplines in the humanities and the social and biological sciences.
4. Education is a cooperative rather than an operative art. ("An operative art is one in which the creation of a product or performance is essentially controlled by the person using the art. . . . A cooperative art . . . works in a facilitative way by guiding and directing a natural entity or process. The farmer, physician, and educator are three classic examples of cooperative artists.")

5. The planning or analysis of an educational activity is usually undertaken in terms of some period that the mind abstracts for analytical purposes from the complicated reality.
6. The planning or analysis of an educational activity may be undertaken by an educator, a learner, an independent analyst, or some combination of the three.
7. Any design of education can best be understood as a complex of interacting elements, not as a sequence of events.

Houle (1978, pp. 48–56) then identifies the following components in his fundamental system, which it is the task of the educator to manage:

1. A possible educational activity is identified.
2. A decision is made to proceed.
3. Objectives are identified and refined.
4. A suitable format is designed.
    a. Learning resources are selected.
    b. A leader or group of leaders is chosen.
    c. Methods are selected and used.
    d. A time schedule is made.
    e. A sequence of events is devised.
    f. Social reinforcement of learning is provided.
    g. The nature of each individual learner is taken into account.
    h. Roles and relationships are made clear.
    i. Criteria for evaluating progress are identified.
    j. The design is made clear to all concerned.
5. The format is fitted into larger patterns of life.
    a. Learners are guided into or out of the activity both at the beginning and subsequently.
    b. Life styles are modified to allow time and resources for the new activity.
    c. Financing is arranged.
    d. The activity is interpreted to related publics.

6. The program is carried out.
7. The results of the activity are measured and appraised.
8. The situation is examined in terms of the possibility of a new educational activity.

Because Tough's studies have been concerned with the self-initiated learning projects of adults, he has focused on the "helping role" of the teacher or other resource person. His investigations have produced the following "fairly consistent composite picture of the ideal helper":

One cluster of characteristics might be summarized by saying that the ideal helper is warm and loving. The individual accepts and cares about the learner and about the learner's project or problem, and takes it seriously. The helper is willing to spend time helping and showing approval, support, encouragement, and friendship. He or she regards the learner as an equal. As a result of these characteristics, the learner feels free to approach this ideal helper, and can talk freely and easily with him or her in a warm and relaxed atmosphere.

A second cluster of characteristics involves the helper's perceptions of the person's capacity as a self-planner. The ideal helper has confidence in the learner's ability to make appropriate plans and arrangements for this learning. The helper has a high regard for the learner's skill as a self-planner, and does not want to take the decision-making control away from him or her.

Third, the ideal helper views personal interaction with the learner as a dialogue, a true encounter in which he or she listens as well as talks. Help will be tailored to the needs, goals, and requests of this unique learner. The helper listens, accepts, understands, responds, helps. These perceptions of the interaction are in sharp contrast to those of "helpers" who want to control, command, manipulate, persuade, influence, and change the learner. Such helpers seem to view communication as "an inexhaustible monologue, addressed to everyone and no one in the form of 'mass communication'. . . . Such a helper perceives the learner as an object, and expects to do something to that object. He is not primarily interested in the other person as a person, and in his needs, wishes, and welfare" (Tough, 1979).

Another cluster of internal characteristics involves the helper's reasons for helping. Perhaps the helper helps because of his or her affection and concern for the learner, Or perhaps the helper may, in

an open and positive way, expect to gain as much as he or she gives. Other sorts of motivation are feelings of pleasure for knowing he or she was helpful, and satisfaction from seeing progress or from the learner's gratitude.

Finally, the ideal helper is probably an open and growing person, not a closed, negative, static, defensive, fearful, or suspicious sort of person. The helper himself or herself is frequently a learner, and seeks growth and new experiences. He or she probably tends to be spontaneous and authentic, and to feel free to behave as a unique person rather than in some stereotyped way (Tough, 1979, pp. 195–197).

These characteristics fit well into an integrated conception of the role of the andragogical teacher. An operational set of principles for that conception of the andragogical teacher is shown in Table 5-3.

CONCEPTS OF TEACHING DERIVED FROM THEORIES OF TEACHING

Some teaching theories, especially the mechanistic models, have evolved directly from learning theories. Others have evolved from analyses of teacher behavior and its consequences and from experimenting with manipulation of the variables in the teaching/learning situation. The previous section presented teaching theories derived from learning theories; this section discusses concepts derived from theories of teaching.

Dewey's Concepts

Perhaps the system of ideas about effective teaching propounded by John Dewey during the first half of the twentieth century has had the greatest impact in the field. Dewey contrasted his basic principles with those of traditional education:

> To imposition from above is opposed expression and cultivation of individuality; to external discipline is opposed free activity; to learning from texts and teacher, learning through experience; to acquisition of isolated skills and techniques by drill, is opposed acquisition of them as means of attaining ends which make direct vital appeal; to preparation for a more or less remote future is opposed making the most of the opportunities of present life; to

Table 5-3
The Role of the Teacher

Conditions of Learning	Principles of Teaching
The learners feel a need to learn.	1. The teacher exposes students to new possibilities of self-fulfillment. 2. The teacher helps each student clarify his own aspirations for improved behavior. 3. The teacher helps each student diagnose the gap between his aspiration and his present level of performance. 4. The teacher helps the students identify the life problems they experience because of the gaps in their personal equipment.
The learning environment is characterized by physical comfort, mutual trust and respect, mutual helpfulness, freedom of expression, and acceptance of differences.	5. The teacher provides physical conditions that are comfortable (as to seating, smoking, temperature, ventilation, lighting, decoration) and conducive to interaction (preferably, no person sitting behind another person). 6. The teacher accepts each student as a person of worth and respects his feelings and ideas. 7. The teacher seeks to build relationships of mutual trust and helpfulness among the students by encouraging cooperative activities and refraining from inducing competitiveness and judgmentalness. 8. The teacher exposes his own feelings and contributes his resources as a colearner in the spirit of mutual inquiry.
The learners perceive the goals of a learning experience to be their goals.	9. The teacher involves the students in a mutual process of formulating learning objectives in which the needs of the students, of the institution, of the teacher, of the subject matter, and of the society are taken into account.
The learners accept a share of the responsibility for planning and operating a learning experience, and	10. The teacher shares his thinking about options available in the designing of learning experiences and the selection of materials and

Table 5-3 Continued

Conditions of Learning	Principles of Teaching
therefore have a feeling of commitment toward it. The learners participate actively in the learning process.	methods and involves the students in deciding among these options jointly.
	11. The teacher helps the students to organize themselves (project groups, learning-teaching teams, independent study, etc.) to share responsibility in the process of mutual inquiry.
The learning process is related to and makes use of the experience of the learners.	12. The teacher helps the students exploit their own experiences as resources for learning through the use of such techniques as discussion, role playing case method, etc. 13. The teacher gears the presentation of his own resources to the levels of experience of his particular students. 14. The teacher helps the students to apply new learning to their experience, and thus to make the learning more meaningful and integrated.
The learners have a sense of progress toward their goals.	15. The teacher involves the students in developing mutually acceptable criteria and methods for measuring progress toward the learning objectives. 16. The teacher helps the students develop and apply procedures for self-evaluation according to these criteria.

(Knowles, 1980, pp. 57–58).

> static aims and materials is opposed acquaintance with a changing world. (Dewey, 1938, pp. 5–6)

Dewey's system is organized around several key concepts. The central concept is experience. In Dewey's system, experience is always the starting point of an educational process; it is never the result. All genuine education comes about through *experience* (1938, p. 13). The central challenge of an education based on *experience* is to select

the kind of present experiences that live fruitfully and creatively in subsequent experiences (pp. 16–17).

A second key concept is *democracy.*

> The question I would raise concerns why we prefer democratic and humane arrangements to those which are autocratic and harsh. . . . Can we find any reason that does not ultimately come down to the belief that democratic social arrangements promote a better quality of human experience, one which is more widely accessible and enjoyed, than do nondemocratic and antidemocratic forms of social life? (1938, pp. 24–25)

Another key concept is *continuity.*

> The principle of continuity of experience means that every experience both takes up something from those which have gone before and modifies in some way the quality of those which come after. . . . Growth, or growing and developing, not only physically but intellectually and morally, is one exemplification of the principle of continuity. (1938, pp. 27–28)

> A primary responsibility of educators is that they not only be aware of the general principle of the shaping of actual experience by environing conditions, but that they also recognize in the concrete what surroundings are conducive to having experiences that lead to growth. Above all, they should know how to utilize the surroundings, physical and social, that exist so as to extract from them all that they have to contribute to building up experiences that are worth while. (1938, p. 35)

Another key concept is *interaction.*

> The word "interaction" expresses the second chief principle for interpreting an experience in its educational function and force. It assigns equal rights to both factors in experience—objective and internal conditions. Any normal experience is an interplay of these two sets of conditions. Taken together, or in their interaction, they form what we call a situation. The trouble with traditional education was not that it emphasized the external

> conditions that enter into the control of the experiences, but that it paid so little attention to the internal factors which also decide what kind of experience is had [the powers and purposes of those taught]. (1938, pp. 38–44)

> It is not the subject per se that is educative or that is conducive to growth. There is no subject that is in and of itself, or without regard to the stage of growth attained by the learner, [an end] such that inherent educational value may be attributed to it. Failure to take into account adaptation to the needs and capacities of individuals was the source of the idea that certain subjects and certain methods are intrinsically cultural or intrinsically good for mental discipline. . . . In a certain sense every experience should do something to prepare a person for later experiences of a deeper and more expansive quality. That is the very meaning of growth, continuity, reconstruction of experience. (1938, pp. 46–47)

> The educator is responsible for a knowledge of individuals and for a knowledge of subject matter that will enable activities to be selected which lend themselves to social organization, an organization in which all individuals have an opportunity to contribute something, and in which the activities in which all participate are the chief carrier of control. . . . The principle that development of experience comes about through interaction means that education is essentially a social process. . . . The teacher loses the position of external boss or dictator but takes on that of leader of group activities. (pp. 61–66)

Many of Dewey's ideas were distorted, misinterpreted, and exaggerated during the heyday of the progressive school movement a few generations ago, which is why it is important to quote him directly. In light of contemporary thinking about teaching, though, don't these ideas seem fresh and useful?

Teaching Through Inquiry

A second set of concepts about teaching with roots both in Dewey's ideas—especially his formulation of scientific thinking—and in those of the cognitive theorists is referred to as the *discovery*

method, the inquiry method, self-directed learning, and problem-solving learning.

Jerome Bruner, perhaps the most notable proponent of this approach to teaching, offers the cognitive theorists' perspective of inquiry teaching and learning (1961b, 1966). In an extensive series of essays, he identifies three roles of teachers as communicators of knowledge, models who inspire, and symbols of "education."

Bruner (1966) contends that a theory of instruction or inquiry teaching must meet the following four criteria:

1. A theory of instruction should specify the experiences that most effectively implant in the individual a predisposition toward learning.
2. A theory of instruction must specify the ways in which a body of knowledge should be structured so that it can be most readily grasped by the learner.
3. A theory of instruction should specify the most effective sequences in which to present the materials to be learned.
4. A theory of instruction should specify the nature and pacing of rewards and punishments in the process of learning and teaching. (pp. 40–41)

Any attempts to determine whether a theory of instruction meets Bruner's four criteria should include considerations of the following types of questions:

- Are there materials that will increase a student's desire to learn? If so, what are they?
- How can I, as a teacher, enhance the students' will to learn? What can be done to make students eager to learn the material?
- What is the most effective method of presentation for this material? Is an interactive or representative presentation best suited for this material? Bruner (1966) identifies modes of presentation in a hierarchical system involving an *enactive mode, iconic mode,* and *symbolic mode* (pp. 10–14). The first level, the enactive mode, requires action on the part of the learner; the second level, the iconic mode, refers to the process of mentally organizing

material; and, the third level, the symbolic mode, involves use of symbols such as language.

- Are the learning materials, tools, and even material appropriate for the level of the students?
- What is the optimal presentation sequence? Is the holistic approach most effective, or should the teacher teach the foundations of the material and then supply the details?
- What and when are rewards to be administered? How will the instruction handle students' successes and errors?

Bruner predicates his system on the will to learn, a trait he believes to exist in all people. The will to learn is an intrinsic motive, one that finds both its source and its reward in its own exercise. The will to learn becomes a "problem" only under specialized circumstances such as those of a school, where a curriculum is set, students confined, and a path fixed. The problem exists not so much in learning itself, but in the fact that what the school imposes often fails to enlist the natural energies that sustain spontaneous learning—curiosity, a desire for competence, aspiration to emulate a model, and a deep-sensed commitment to the web of social reciprocity (the human need to respond to others and to operate jointly with them toward an objective (1966, pp. 125–127).

Bruner (1961b) further distinguishes teaching in the *expository mode* and teaching in the *hypothetical mode:*

> In the former, the decisions concerning the mode and pace and style of exposition are principally determined by the teacher as expositor; the student is the listener. . . . In the hypothetical mode, the teacher and the student are in a more cooperative position. . . . The student is not a bench-bound listener, but takes a part in the formulation and at times may play the principal role in it. (p. 126)

The hypothetical mode leads to students engaging in acts of discovery, a process that Bruner sees as having four benefits: (1) increasing intellectual powers, (2) shifting from extrinsic to intrinsic rewards, (3) learning the heuristics of discovering, and (4) making material more readily accessible in memory. This mode is more congruent with and more likely to nurture the will to learn.

Bruner conveys the operational aspects of discovery teaching by describing it in action in case studies of actual courses. But Postman and Weingartner provide the following list of behaviors observable in teachers using the inquiry method:

- The teacher rarely tells students what he thinks they ought to know. He believes that telling, when used as a basic teaching strategy, deprives students of the excitement of doing their own finding and of the opportunity for increasing their power as learners.
- His basic mode of discourse with students is questioning. While he uses both convergent and divergent questions, he regards the latter as the more important tool. He emphatically does not view questions as a means of seducing students into parroting the text or syllabus; rather, he sees questions as instruments to open engaged minds to unsuspected possibilities.
- Generally, he does not accept a single statement as an answer to a question. In fact, he has a persisting aversion to anyone, any syllabus, any text that offers The Right Answer. Not because answers and solutions are unwelcome—indeed, he is trying to help students be more efficient problem solvers—but because he knows how often The Right Answer serves only to terminate further thought. He knows the power of pluralizing. He does not ask for the reason, but for the reasons. Not for the cause, but the causes. Never the meaning, what are the meanings? He knows, too, the power of contingent thinking. He is the most "It depends" learner in his class.
- He encourages student/student interaction as opposed to student/teacher interaction. And generally he avoids acting as a mediator or judge of the quality of ideas expressed. If each person could have with him at all times a full roster of authorities, perhaps it would not be necessary for individuals to make independent judgments. But so long as this is not possible, the individual must learn to depend on himself as a thinker. The inquiry teacher is interested in students developing their own criteria or standards for judging the quality, precision, and relevance of ideas. He permits such development to occur by minimizing his role as arbiter of what is acceptable and what is not.
- He rarely summarizes the positions taken by students on the learnings that occur. He recognizes that the act of summary, of

"closure," tends to have the effect of ending further thought. Because he regards learning as a process, not a terminal event, his "summaries" are apt to be stated as hypotheses, tendencies, and directions. He assumes that no one ever learns once and for all how to write, or how to read, or what were the causes of the Civil War. Rather, he assumes that one is always in the process of acquiring skills, assimilating new information, formulating or refining generalizations. Thus, he is always cautious about defining the limits of learning, about saying, "This is what you will learn between now and the Christmas holidays," or even (especially), "This is what you will learn in the ninth grade." The only significant terminal behavior he recognizes is death, and he suspects that those who talk of learning as some kind of "terminal point" are either compulsive travelers or have simply not observed children closely enough. Moreover, he recognizes that learning does not occur with the same intensity in any two people, and he regards verbal attempts to disregard this fact as a semantic fiction. If a student has arrived at a particular conclusion, then little is gained by the teacher's restating it. If the student has not arrived at a conclusion, then it is presumptuous and dishonest for the teacher to contend that he has. (Any teacher who tells you precisely what his students learned during any lesson, unit, or semester quite literally does not know what he is talking about.)

- His lessons develop from the responses of students and not from a previously determined "logical" structure. The only kind of lesson plan, or syllabus, that makes sense to him is one that tries to predict, account for, and deal with the authentic responses of learners to a particular problem: the kinds of questions they will ask, the obstacles they will face, their attitudes, the possible solutions they will offer, and soon. Thus, he is rarely frustrated or inconvenienced by "wrong answers," false starts, irrelevant directions. These are the stuff of which his best lessons and opportunities are made. In short, the "content" of his lessons are the responses of his students. Since he is concerned with the processes of thought rather than the end results of thought (The Answer!), he does not feel compelled to "cover ground" (there's the traveler again), or to ensure that his students embrace a particular doctrine, or to exclude a student's idea because it is not

germane. (Not germane to what? Obviously, it is germane to the student's thinking about the problem.) He is engaged in exploring the way students think, not what they should think (before the Christmas holidays). That is why he spends more of his time listening to students than talking to or at them.

- Generally, each of his lessons poses a problem for students. Almost all of his questions, proposed activities, and assignments are aimed at having his students clarify a problem, make observations relevant to the solution of the problem, and make generalizations based on their observations. His goal is to engage students in those activities that produce knowledge: defining, questioning, observing, classifying, generalizing, verifying, applying. As we have said, all knowledge is a result of these activities. Whatever we think we "know" about astronomy, sociology, chemistry, biology, linguistics, and the like was discovered or invented by someone who was more or less an expert in using inductive methods of inquiry. Thus, our inquiry, or "inductive," teacher is largely interested in helping his students to become more proficient as users of these methods. He measures his success in terms of behavioral changes in students: the frequency with which they ask questions; the increase in the relevance and cogency of their question; the frequency and conviction of their challenges to assertions made by other students or teachers or textbooks; the relevance and clarity of the standards on which they base their challenges; their willingness to suspend judgments when they have insufficient data; their willingness to modify or otherwise change their position when data warrant such change; the increase in their tolerance for diverse answers; their ability to apply generalizations, attitudes, and information to novel situations.

These behaviors and attitudes amount to a definition of a different role for the teacher from that which he has traditionally assumed. The inquiry environment, like any other school environment, is a series of human encounters, the nature of which is largely determined by the "teacher." "Teacher" is here placed in quotation marks to call attention to the fact that most of the word's conventional meanings are inimical to inquiry methods. It is not uncommon, for example, to hear "teachers" make statements such as, "Oh,

I taught them that, but they didn't learn it." There is no utterance made in the Teachers' Room more extraordinary than this. From our point of view, it is on the same level as a salesman's remarking, "I sold it to him, but the didn't buy it," which is to say, it makes no sense. It seems to mean that "teaching" is what a "teacher" does, which, in turn, may or may not bear any relationship to what those being "taught" do (Postman and Weingartner, 1969, pp. 34–37).

Suchman (1972) has described vividly the success of the Inquiry Training Project at the University of Illinois in developing inquiry skills in elementary school children. As a result of this experience, he feels confident in the feasibility of "an inquiry-centered curriculum"

> in which the children would find themselves launched into areas of study by first being confronted by concrete problem-focused episodes for which they would attempt to build explanatory systems. Part of their data gathering might well be in the question-asking mode and certainly along the way time would have to be spent in building inquiry skills through critiques and other such procedures. Yet there would also be room for helping the children enlarge their conceptual systems through more teacher-directed means. (p. 158)

Crutchfield (1972) counts four sets of skills involved in productive thinking, his synonym for problem-solving or inquiry learning:

1. Skills of problem discovery and formulation
2. Skills in organizing and processing problem information
3. Skills in idea generation
4. Skills in the evaluation of ideas (pp. 192–195)

The notion that the development of skills of inquiry should be a primary goal of youth education is the cornerstone of the concept of education as a lifelong process. This makes it especially significant that the Governing Board of the UNESCO Institute for Education in Hamburg, Germany, decided in March 1972 to focus on research and experimental projects in an exploratory study, "The Concept of Lifelong Education and Its Implications for School Curriculum."

Teaching Through Modeling

Albert Bandura, at Stanford University, has developed the most elaborate system of thought on imitation, identification, or modeling as concepts of teaching. Labeling the system *social learning*, Bandura regards reinforcement theories of instrumental conditioning, such as Skinner's, as able to account for the control of previously learned matching responses, but unable to account for the way new response patterns are acquired through observation and imitation.

In teaching by modeling, the teacher behaves in ways that he or she wants the learner to imitate. The teacher's basic technique is role modeling. Bandura and Walters (1963) identified three kinds of effects from exposing the learner to a model: (1) a *modeling effect*, whereby the learner acquires new kinds of response patterns; (2) an *inhibitory or disinhibitory effect*, whereby the learner decreases or increases the frequency, latency, or intensity of previously acquired responses; and (3) *an eliciting effect*, whereby the learner merely receives from the model a cue for releasing a response that is neither new nor inhibited. For example, the modeling effect occurs when the teacher himself or herself shows learners how to listen empathically to one another by listening empathically to them. The inhibiting or disinhibiting effect occurs when the teacher lets the learners know, through modeling, that it is or is not approved behavior to express their feelings openly. Thus, the teacher inhibits or disinhibits an old response. The eliciting effect occurs when, through modeling, the teacher teaches the art of giving and receiving feedback by inviting the learners to constructively criticize his or her own performance. Accordingly, the teacher is providing a cue eliciting a response neither new nor inhibited.

Gage (1972) remarks that "learning through imitation seems to be especially appropriate for tasks that have little cognitive structure" (p. 47). This observation seems to be borne out by the fact that social learning has been applied principally to behavioral modification in therapeutic settings to correct deviant or antisocial behavior, but its application to such positive educational purposes as the development of attitudes, beliefs, and performance skills has also been demonstrated (Bandura, 1969, pp. 599–624). No doubt every teacher employs modeling as one of many techniques, whether consciously or unconsciously. The teacher's potency as a model will be influenced

by such characteristics as age, sex, socioeconomic status, social power, ethnic background, and intellectual and vocational status.

Although social learning has been employed chiefly to achieve behavioral changes through external management of reinforcement contingencies, in recent years there has been a growing interest in self-control processes in which individuals regulate their own behavior by arranging appropriate contingencies for themselves. These self-directed endeavors comprise a variety of strategies, about which Bandura (1969) makes the following observations.

> The selection of well-defined objectives, both intermediate and ultimate, is an essential aspect of any self-directed program of change. The goals that individuals choose for themselves must be specified in sufficiently detailed behavioral terms to provide adequate guidance for the actions that must be taken daily to attain desired outcomes.
>
> To further increase goal commitment, participants are asked to make contractual agreements to practice self-controlling behaviors in their daily activities. . . . Under conditions where individuals voluntarily commit themselves to given courses of action, subsequent tendencies to deviate are likely to be counteracted by negative self-evaluations. Through this mechanism, and anticipated social reactions of others, contractual commitments reinforce adherence to corrective practices.
>
> Satisfactions derived from evident changes help to sustain successful endeavors, therefore, utilized objective records of behavioral changes as an additional source of reinforcement for their self-controlling behavior. . . .
>
> Since behavior is extensively under external stimulus control, persons can regulate the frequency with which they engage in certain activities by altering stimulus conditions under which the behavior customarily occurs. Overeating, for example, will arise more often when appetizing foods are prominently displayed in frequented places in the household than if they are stored out of sight and made less accessible. . . .
>
> Behavior that provides immediate positive reinforcement, such as eating, smoking, and drinking, tends to be performed in diverse situations and at varied times. Therefore, another important

aspect of self-managed change involves progressive narrowing of stimulus control over behavior. Continuing with the obesity illustration, individuals are encouraged gradually to delimit the circumstances under which they eat until eventually their eating behavior is brought under control of a specific set of stimulus conditions. This outcome is achieved by having the clients commit themselves to a graduated program in which they refrain from eating in non-dining settings, between regular mealtimes, and while engaging in other activities such as watching television, reading, or listening to the radio. . . .

The foregoing procedures are primarily aimed at instituting self-controlling behavior, but unless positive consequences are also arranged the well-intentioned practices are likely to be short-lived. . . . Self-control measures usually produce immediate unpleasant effects while the personal benefits are considerably delayed. Self-reinforcing operations are, therefore, employed to provide immediate support for self-controlling behavior until the benefits that eventually accrue take over the reinforcing function.

As a final feature of self-directed change programs, increases in desired behavior and reductions in undesired behavior are attempted gradually. In this way the incidence of experienced discomforts is kept low, and steady progress toward the eventual goal can be achieved. (pp. 254–257)

PERSPECTIVE TRANSFORMATION/CRITICAL REFLECTIVITY

A recent new thrust in theorizing about the purpose of teaching/learning is the notion that it is not sufficient for adult education programs to satisfy the identified learning needs of individuals, organizations, and society. Rather, they should seek to help adult learners transform their very way of thinking about themselves and their world—what Mezirow (1991) calls "perspective transformation." Brookfield (1986) proposes that this can be achieved through the development of competence in "critical reflectivity." He states his case in these words:

> It will be the case, then, that the most significant personal learning adults undertake cannot be specified in advance in terms of objectives to be obtained or behaviors (of whatever kind) to be performed. Thus, significant personal learning might be defined as that learning in which adults come to reflect on their self-images, change their self-concepts, question their previously internalized norms (behavioral and moral), and reinterpret their current and past behaviors from a new perspective. . . .
>
> Significant personal learning entails fundamental change in learners and leads them to redefine and reinterpret their personal, social, and occupational world. In the process, adults may come to explore affective, cognitive, and psychomotor domains that they previously had not perceived as relevant to themselves. (pp. 213–214)

Brookfield (1986) points out that the addition of this "analytic component" to the role of the facilitator of learning requires that the facilitators and practitioners prompt learners to consider alternative perspectives on their personal political, work, and social lives. Hence, effective facilitation means that learners will be challenged to examine their previously held values, beliefs, and behaviors and will be confronted with ones that they may not want to consider. Such challenges and confrontations need not be done in an adversarial, combative, or threatening manner; indeed, the most effective facilitator is one who can encourage adults to consider rationally and carefully perspectives and interpretations of the world that diverge from those they already hold, without making these adults feel they are being cajoled or threatened. This experience may produce anxiety, but such anxiety should be accepted as a normal component of learning and not something to be avoided at all costs for fear that learners will leave the group. There are forms of fulfillment that are quite unlike those produced by a wholly joyful encounter with a new form of knowledge or a new skill area. It is this dimension of increased insight through critical reflection on current assumptions and past beliefs and behaviors that is sometimes ignored in treatments of adult learning (pp. 285-286).

Change Theory

Another system of thought that has great implications for educational practice has to do with influencing the educative quality of total environments. Concepts and strategies in this system are drawn from field theory, systems theory, organizational development and consultation theories, and ecological psychology.

The systems theorists have provided conceptual frameworks for analyzing organizations of all types as complex social systems with interacting subsystems (Cleland, 1969; Kast and Rosenzweig, 1970; Knowles, 1980; Parsons, 1951; Seiler, 1967; Von Bertalanffy, 1968; Zadeh, 1969). Knowles (1980, pp. 66–80) presents an interpretation of some of the applications of their work for human resources development in one of his earlier works:

> One of the misconceptions in our cultural heritage is the notion that organizations exist purely to get things done. This is only one of their purposes; it is their work purpose. But every organization is also a social system that serves as an instrumentality for helping people meet human needs and achieve human goals. In fact, this is the primary purpose for which people take part in organizations—to meet their needs and achieve their goals—and when an organization does not serve this purpose for them they tend to withdraw from it. So organizations also have a human purpose.
>
> Adult education is a means available to organizations for furthering both purposes. Their work purpose is furthered to the extent that they use adult education to develop the competencies of their personnel to do the work required to accomplish the goals of the organizations. Their human purpose is furthered to the extent that they use adult education to help their personnel develop the competencies that will enable them to work up the ladder of Maslow's hierarchy of needs for survival through safety, affection, and esteem to self-actualization.
>
> As if by some law of reciprocity, therefore, organization provides an environment for adult education. In the spirit of Marshall McLuhan's *The Medium Is the Message*, the quality of learning that takes place in an organization is affected by the kind of organization it is. This is to say that an organization is

not simply an instrumentality for providing organized learning activities to adults; it also provides an environment that either facilitates or inhibits learning.

For example, if a young executive is being taught in his corporations' management-development program to involve his subordinates in decision making within his department, but his own superiors never involve him in making decisions, which management practice is he likely to adopt? Or if an adult church member is being taught to "love thy neighbor," but the total church life is characterized by discrimination, jealousy, and intolerance, which value is more likely to be learned? Or if an adult student in a course on "The Meaning of Democratic Behavior" is taught that the clearest point of differentiation between democracy and other forms of government is the citizen's sharing in the process of public policy formulation, but the teacher has never given him a chance to share responsibility for conducting the course and the institution has never asked his advice on what courses should be offered, what is he likely to learn about the meaning of democracy?

No educational institution teaches just through its courses, workshops, and institutes; no corporation teaches just through its in-service education programs; and no voluntary organization teaches just through its meetings and study groups. They all teach by everything they do, and often they teach opposite lessons in their organizational operation from what they teach in their educational program.

This line of reasoning has led modern adult-education theorists to place increasing emphasis on the importance of building an educative environment in all institutions and organizations that undertake to help people learn. What are the characteristics of an educative environment? They are essentially the manifestations of the conditions of learning listed at the end of the last chapter. But they can probably be boiled down to four basic characteristics: 1) respect for personality, 2) participation in decision making, 3) freedom of expression and availability of information, and 4) mutuality of responsibility in defining goals, planning and conducting activities, and evaluating.

In effect, an educative environment—at least in a democratic culture—is one that exemplifies democratic values, that practices a democratic philosophy.

A democratic philosophy is characterized by a concern for the development of persons, a deep conviction as to the worth of every individual, and faith that people will make the right decisions for themselves if given the necessary information and support. It gives precedence to the growth of people over the accomplishment of things when these two values are in conflict. It emphasizes the release of human potential over the control of human behavior. In a truly democratic organization there is a spirit of mutual trust, an openness of communications, a general attitude of helpfulness and cooperation, and a willingness to accept responsibility, in contrast to paternalism, regimentation, restriction of information, suspicion, and enforced dependency on authority.

When applied to the organization of adult education, a democratic philosophy means that the learning activities will be based on the real needs and interests of the participants; that the policies will be determined by a group that is a representative of all participants; and that there will be a maximum of participation by all members of the organization in sharing responsibility for making and carrying out decisions. The intimate relationship between democratic philosophy and adult education is eloquently expressed in these words of Eduard Lindeman:

> One of the chief distinctions between conventional and adult education is to be found in the learning process itself. None but the humble become good teachers of adults. In an adult class the student's experience counts for as much as the teacher's knowledge. Both are exchangeable at par. Indeed, in some of the best adult classes it is sometimes difficult to discover who is learning most, the teacher or the students. This two-way learning is also reflected in the management of adult-education enterprises. Shared learning is duplicated by shared authority. In conventional education the pupils adapt themselves to the curriculum offered, but in adult education the pupils aid in formulating the curricula. . . . Under democratic conditions authority is of the

> group. This is not an easy lesson to learn, but until it is learned democracy cannot succeed. (Gessner, 1956, p. 166)
>
> I have a suspicion that for an organization to foster adult learning to the fullest possible degree it must go even farther than merely practicing a democratic philosophy, that it will really stimulate individual self-renewal to the extent that it consciously engages in continuous self-renewal for itself. Just as a teacher's most potent tool is the example of his own behavior, so I believe an organization's most effective instrument of influence is its own behavior.
>
> This proposition is based on the premise that an organization tends to serve as a role model for those it influences. So if its purpose is to encourage its personnel, members, or constituents to engage in a process of continuous change and growth, it is likely to succeed to the extent that it models the role of organizational change and growth. This proposition suggests, therefore, that an organization must be innovative as well as democratic if it is to provide an environment conducive to learning. Table 5-4 provides some illustrative characteristics that seem to distinguish innovative from static organizations, as I interpret the insights from recent research on this fascinating subject. The right-hand column might well serve as a beginning checklist of desirable organizational goals in the dimensions of structure, atmosphere, management philosophy, decision making, and communication. (pp. 66–68)

An increasing number of systems theory applicators are developing sophisticated procedures and tools to assess organizational health, diagnose needs for change, feed data back into the system for continued renewal, and use the data for precision in planning (Baughart, 1969; Bushnell and Rappaport, 1972; Davis, 1966; Handy and Hussain, 1968; Hare, 1967; Hartley, 1968; Kaufman, 1972; Rudwick, 1969; Schuttenberg, 1972).

The change theorists, building largely on the field-theoretical concepts of Kurt Lewin, have been concerned with the planning of change, the choice and use of strategies of change, organizational development, the role of the consultant and change agent, management of conflict, intervention theory, resistance to change, human relations training and the ethics of change agentry (Argyris, 1962, 1970; Bennis, 1966; Bennis, Benne, and Chin, 1968; Blake and

Table 5-4
Some Characteristics of Static Versus Innovative Organizations

DIMENSIONS	CHARACTERISTICS	
	Static Organizations	**Innovative Organizations**
Structure	Rigid—much energy given to maintaining permanent departments, committees; reverence for tradition, constitution and by-laws.	Flexible—much use of temporary task forces; easy shifting of departmental lines; readiness to change constitution; depart from tradition.
	Hierarchical—adherence to chain of command.	Multiple linkages based on functional collaboration.
	Roles defined narrowly.	Roles defined broadly.
	Property-bound.	Property-mobile.
Atmosphere	Task-centered, impersonal.	People-centered, caring.
	Cold, formal, reserved.	Warm, informal, intimate.
	Suspicious.	Trusting.
Management	Function of management is to control personnel through coercive power.	Function of management is to release the energy of personnel; power is used supportively.
Philosophy and Attitudes	Cautious—low risk-taking.	Experimental—high risk-taking.
	Attitude toward errors: to be avoided.	Attitude toward errors: to be learned from.
	Emphasis on personnel selection.	Emphasis on personnel development.
	Self-sufficiency—closed system regarding sharing resources.	Interdependency—open system regarding sharing resources.
	Emphasis on conserving resources.	Emphasis on developing and using resources.
	Low tolerance for ambiguity.	High tolerance for ambiguity.
Decision making and Policy making	High participation at top, low at bottom.	Relevant participation by all those affected.
	Clear distinction between policy making and policy execution.	Collaborative policy making and policy execution.

(table continued on next page)

Table 5-4 Continued

DIMENSIONS	CHARACTERISTICS	
	Static Organizations	**Innovative Organizations**
	Decision making by legal mechanisms.	Decision making by problem solving.
	Decisions treated as final.	Decisions treated as hypotheses to be tested.
Communication	Flow restricted.	Open flow—easy access.
	One-way—downward.	Multidirectional—up, down, sideways.
	Feelings repressed or hidden.	Feelings expressed.

Mouton, 1964; Eiben and Milliren, 1976; Greiner, 1971; Lewin, 1951; Lippitt, 1969; Schein, 1969; Watson, 1967; Zurcher, 1977).

SUMMARY

Theories of learning differ from theories of teaching. Various researchers have studied the topics of learning and teaching theories and the teaching/learning interaction. Consequently, a variety of theories exist about the nature of teaching and the teacher's role. Gage recognizes the distinction between the two theoretical frameworks, and asserts that learning theories address methods of learning, whereas teaching theories address the methods employed to influence learning. Understandably, there is a strong correlation between learning and teaching theories: the learning theory(ies) adopted by the teacher affect the teaching theory(ies) employed. Both learning theories and teaching theories have played a prominent role in the research efforts, providing both principles of teaching and teaching concepts.

Hilgard's contribution is the identification of a schema of 20 learning principles from stimulus-response, cognitive, and motivation and personality theories. He used prominent theorists with similar notions about the roles of teachers to validate his premise. These

included Thorndike, Guthrie, Skinner, Hull, Tolman, and Gagne, each an important contributor to the field.

Other theorists, including Rogers and Maslow, have focused on studies of adults in their research efforts. Their findings differ vastly from researchers who focused on animals and children. For instance, Rogers emphasizes the concepts of environment and facilitation in his explication of teaching—a sentiment with which Maslow would undoubtedly agree. The only exception is that Maslow would place an even greater emphasis on the teacher's responsibility for providing safety. Watson, Houle, and Tough have also provided insight in this area of study.

Of the concepts derived from theories of teaching, Dewey's are perhaps the most influential. His work resulted in the development of a system established on the concepts of experience, democracy, continuity, and interaction. It is Dewey's conceptualization of scientific thinking, in conjunction with those of cognitive theorists, that spawned the discovery or inquiry method. Other contributors in this area include Bruner, Suchman, and Crutchfield.

Identification or modeling as concepts of teaching, the most elaborate system of thought or imitation, was developed by Bandura. In this system, role modeling is the teacher's fundamental technique. Gage, analyzing the usefulness of the technique, states, "learning through imitation seems to be especially appropriate for tasks that have little cognitive structure."

Continued research efforts have resulted in new systems of thought. The value of teaching/learning as a tool to invoke critical thinking on the part of adults is an emerging concept: Mezirow calls this perspective transformation, and Brookfield calls it critical reflectivity. Another system of thought, drawing from field theory, systems theory, organizational development and consultation theories and ecological psychology, encompasses the ramifications of influencing the educative quality of total environments.

Reflection Questions

5.1 What is the wisdom behind Hilgard's 20 principles of teaching?

5.2 What ideas from Guthrie and Skinner (both behaviorists) make the most sense to you and why?

5.3 Using Robert Gagne's types of learning (Table 5-2), classify your own learning when reading this chapter versus applying what your learned when instructing.

5.4 Summarize Carl Rogers's view of the teacher/learner relationship.

5.5 Summarized John Dewey's contribution to understanding the learning process.

5.6 How do you see teaching through inquiry and teaching through modeling as being useful?

5.7 Describe a transformational learning experience that you or someone you know has gone through.

CHAPTER 6

An Andragogical Process Model for Learning

The andragogical model is a process model, in contrast to the content models employed by most traditional educators. The difference is this: In traditional education the teacher (or trainer or curriculum committee or somebody) decides in advance what knowledge or skill needs to be transmitted, arranges this body of content into logical units, selects the most efficient means for transmitting this content (lectures, readings, laboratory exercises, films, tapes, etc.), and then develops a plan for presenting these content units in some sort of sequence. This is a *content* model (or design). The andragogical teacher (facilitator, consultant, change agent) prepares in advance a set of procedures for involving the learners (and other relevant parties) in a process involving these elements: (1) preparing the learner; (2) establishing a climate conducive to learning; (3) creating a mechanism for mutual planning; (4) diagnosing the needs for learning; (5) formulating program objectives (which is content) that will satisfy these needs; (6) designing a pattern of learning experiences; (7) conducting these learning experiences with suitable techniques and materials; and (8) evaluating the learning outcomes and rediagnosing learning needs. This is a *process* model. The difference is not that one deals with content and the other does not; the difference is that the content model is concerned with transmitting information and skills, whereas the process model is concerned with providing procedures and resources for helping learners acquire information and skills. A comparison of these two models and their underlying

assumptions is presented in Table 6-1 in which the content model is conceived as being pedagogical and the process model as being andragogical.

Table 6-1
Process Elements of Andragogy

Process Elements		
Element	**Pedagogical Approach**	**Andragogical Approach**
1-Preparing Learners	Minimal	Provide information Prepare for participation Help develop realistic expectations Begin thinking about content
2-Climate	Authority-oriented Formal Competitive	Relaxed, trusting Mutually respectful Informal, warm Collaborative, supportive Openness and authenticity Humanness
3-Planning	By teacher	Mechanism for mutual planning by learners and facilitator
4-Diagnosis of Needs	By teacher	By mutual assessment
5-Setting of Objectives	By teacher	By mutual negotiation
6-Designing Learning Plans	Logic of subject matter Content units	Sequenced by readiness Problem units
7-Learning Activities	Transmittal techniques	Experiential techniques (inquiry)
8-Evaluation	By teacher	Mutual re-diagnosis of needs Mutual measurement of program

Developed from Knowles (1992) and Knowles (1995)

Preparing the Learner

It was not until 1995 (Knowles, 1995) that it became apparent that this step needed to be added as a separate step to the process model. Previously the process model had consisted of only seven steps, all of which will be discussed in this chapter. However, it became increasingly apparent that an important aspect of program design flowed from the adult educational models. They assume a high degree of responsibility for learning to be taken by the learner; in the andragogical and learning projects models, especially, the entire systems are built around the concept of self-directed learning. But by and large, the adults we work with have not learned to be self-directing inquirers; they have been conditioned to be dependent on teachers to teach them. And so they often experience a form of culture-shock when first exposed to truly adult educational programs.

For this reason, designs of programs for new entrants are increasingly including a preparatory learning-how-to-learn activity. This activity may range from an hour to a day in length, depending on the length and intensity of the total program, and consists of the following elements:

1. A brief explanation of the difference between proactive and reactive learning.
2. A short experience in identifying the resources of the participants (who knows what, or who, has had experience doing what) and establishing collaborative, I-Thou (rather than It-It) relationships with one another as human beings. For this exercise, groups of four or five participants are recommended.
3. A mini-project in using the skills of proactive learning, such as reading a book proactively or using a supervisor proactively.

It has been our experience that even a brief experiential encounter with the concepts and skills of self-directed learning helps adults to feel more secure in entering into an adult educational program. For a manual on how to help people become self-directed learners, see Knowles (1975). (See also Brookfield, 1986; Daloz, 1986; Long et al, 1988; Moore and Willis, 1989; Robertson, 1988; Rountree, 1986; Smith, 1988.)

Establishing a Climate Conducive to Learning

Just as we have witnessed in the past decade a growing concern for the quality of our environment for living, so during the same period there has been increasing concern among educators for the quality of environments for learning. From the ecological psychologists we have begun to obtain valuable information about the effects of the physical properties of environment on learning. The social psychologists have taught us much about the effects of the human environment—especially the quality of interpersonal relations. And from the industrial psychologists have come many useful insights about the effects of the organizational environment—the structure, policies, procedures, and spirit of the institution in which learning takes place.

The physical environment requires provision for animal comforts (temperature, ventilation, easy access to refreshments and rest rooms, comfortable chairs, adequate light, good acoustics, etc.) to avoid blocks to learning. More subtle physical features may make even more of an impact. Ecological psychologists are finding, for example, that color directly influences mood; bright colors tend to induce cheerful, optimistic moods, and dark or dull colors induce the opposite.

If you are saying, "But what can I, a mere educator, do about the color of my institution?" let me share an experience I had several years ago. I was meeting with a class of about 50 students in a large classroom in the basement of one of our university buildings. The windows were small and transmitted very little light, so we had to have the yellow ceiling lights on all the time. The walls were painted dusty institutional beige, and two walls were ringed with black chalkboards. During the third meeting of the class, I became conscious of the fact that this class wasn't clicking the way most classes do, and I shared my feeling of discouragement with the students. It took them no time at all to diagnose the problem as being the dolorous environment of our meetings.

One of our learning/teaching teams agreed to experiment with our environment at the next meeting. They went to the dime store and bought brightly colored construction paper and a variety of other materials and objects, the total cost of which was under $5, and

made collages for the walls, mobiles for the ceiling and simulated flagstones for the floor. What a happier mood characterized our fourth meeting!

Ecological psychologists also suggest that the size and layout of physical space affects learning quality. In planning the new Kellogg Centers for Continuing Education during the past several decades, great emphasis was placed on providing small discussion-group-sized rooms in close proximity to larger general-session-sized rooms. All of them are provided with round, oval, or hexagon-shaped tables to encourage interaction among the learners. (Alford, 1968; Knowles, 1980, pp. 163–165.) This concern for environmental facilitation of interaction among the learners is supported by the behaviorists' concept of immediacy of feedback, the importance placed on the learner having an active role is supported by Dewey, and the utilization of the constructive forces in groups is supported by field theorists and humanistic psychologists. (See especially, Alford, 1968; Bany and Johnson, 1964; Bergevin and McKinley, 1965; Jaques, 1984; Leypoldt, 1967; Mouton and Blake, 1984; Zander, 1982.)

Another aspect of the environment that all theorists agree is crucial to effective learning is the richness and accessibility of resources—both material and human. Provision of a basic learning resources center with books, pamphlets, manuals, reprints, journals, films, film strips, slides, tapes, and other audiovisual aids and devices is a minimal requirement. In no dimension of education have there been more explosive developments in recent times than in educational media—closed circuit television, videotape and portable videotape machines, cassette audiotapes, technimation, teaching machines, multimedia systems consoles, a variety of information retrieval systems, amplified telephones (for telelectures), learning center systems, language laboratories, computer-assisted instruction, and commercially produced simulations and games. (See Rossi and Biddle, 1966.)

The important thing is not just that these resources are available but that learners use them proactively rather than reactively—although mechanistic and organismic theorists disagree on this.

Regarding the human and interpersonal climate, there are useful concepts from many theories. Behaviorists, although not very concerned with psychological climate, would acknowledge that it may

reinforce desired behaviors, especially in motivation and transfer or maintenance of learning. An institutional climate in which self-improvement is highly approved (and even better, concretely rewarded) is likely to increase motivation to engage in learning activities. And a climate that approves and rewards new behaviors will encourage the maintenance of these behaviors, especially if it allows frequent practice of these new behaviors. This is why supervisors who learn Theory Y behaviors in an outside human relations laboratory so frequently revert to Theory X behaviors after returning to a Theory X environment.

Cognitive theorists stress the importance of a psychological climate of orderliness, clearly defined goals, careful explanation of expectations and opportunities, openness of the system to inspection and questioning, and honest and objective feedback. The cognitive theorists who emphasize learning by discovery also favor a climate that encourages experimentation (hypothesis-testing) and is tolerant of mistakes provided something is learned from them.

Personality theorists, especially those who are clinically oriented, emphasize the importance of a climate in which individual and cultural differences are respected, in which anxiety levels are appropriately controlled (enough to motivate but not so much as to block), in which achievement motivations are encouraged for those who respond to them and affiliation motivations are encouraged for those who respond to them, and in which feelings are considered to be as relevant to learning as ideas and skills. They prescribe a "mentally healthful" climate. (See, especially, Waetjen and Leeper, 1966.)

Humanistic psychologists suggest that we create psychological climates experienced by the individuals in them as safe, caring, accepting, trusting, respectful, and understanding. The field theorists among them especially emphasize collaboration rather than competitiveness, encouragement of group loyalties, supportive interpersonal relations, and a norm of interactive participation. The andragog would include these characteristics under the heading, "An Atmosphere of Adultness," but would give added emphasis to the conditions of mutuality and informality in the climate.

The notion of an organizational climate involves several sets of ideas. One set has to do with the policy framework undergirding the HRD program. In some organizations personnel development is relegated to peripheral status in the policy framework (and therefore, there is not much reinforcement of motivation to engage in it).

But contemporary organization theorists (Argyris, Bennis, Blake, Drucker, Likert, Lippitt, MacGregor, Odiorne, Schein) assign it a central role in the achievement of organizational goals, and this is the trend among at least the largest organizations. (For examples of policy statements, see Craig and Bittel, 1967, pp. 493–506; and Knowles, 1980, pp. 274–294.)

Another set of ideas regarding organizational climate has to do with management philosophy. As discussed earlier in this chapter, a Theory X management philosophy provides an organizational climate that almost dictates mechanistic models of training, and a Theory Y philosophy requires an organismic (and probably humanistic) model of HRD.

A third aspect of organizational climate, closely related to the second and possibly a part of it, is the structure of the organization. A number of studies have shown that in hierarchically structured organizations there is less motivation for self-improvement and more blocks to learning (such as high anxiety) than in organizations more functionally structured such as by interlinked work groups or by project task forces. (See Marrow, Bowers, and Seashore, 1968; Katz and Kahn, 1966; and Likert, 1961, 1967.) The rapid growth of quality circles in recent years is another manifestation of this trend.

Organizational climate is also affected by financial policies. At the most primary level, the sheer amount of financial resources made available to HRD influences attitudes toward personnel development all the way down the line. When employees see that their organization values HRD highly enough to support it liberally, they are likely to value it—and vice versa. And if in times of austerity, it is the first budget to be reduced, it will come to be seen as a peripheral activity. Perhaps the ultimate signal that an organization has a deep commitment to human resources development is when the HRD budget is handled as a capital investment (like a new building) rather than as an operating cost. (See Carnevale, 1983; Eurich, 1985.)

Finally, a most crucial determinant of climate is the reward system. All learning and teaching theorists would jump on the S-R theorists' bandwagon in acknowledging that those behaviors (including engaging in education) that are rewarded are likely to be maintained. Accordingly, in those organizations in which participation in the HRD program is given obvious weight in wage and salary increases, promotion, and other job emoluments, the climate will certainly be

more conducive to learning than in organizations in which the attitude is that learning should be its own reward.

In my own andragogical model, climate setting is probably the most crucial element in the whole process of HRD. If the climate is not really conducive to learning, if it doesn't convey that an organization values human beings as its most valuable asset and their development its most productive investment, then all the other elements in the process are jeopardized. There isn't much likelihood of having a first-rate program of educational activities in an environment that is not supportive of education.

This emphasis on organizational climate has grave implications for the role of the human resources developer, for it implies that of the three roles Nadler and Nadler (1970, pp. 174–246) assign to him or her, by far the most critical is the role of consultant, within which the most critical subroles are those of advocate, stimulator, and change agent. If the human resources developer sees himself or herself essentially as a teacher and administrator, managing the logistics of learning experiences for collections of individuals, then he or she will have little influence on the quality of the climate of his organization. Only if the human resources developer defines the client as the total organization, and his or her mission as the improvement of its quality as an environment for the growth and development of people, will he or she be able to affect its climate. This means that the human resources developer must perceive management to be a prime target in his or her student body, and all the line supervisors as part of his or her faculty. In this conceptualization, training is not a staff function; it is a line function. The job of the human resources developer is to help everybody be a better educator.

The theories most relevant to this set of functions are those of systems analysis (Baughart, 1969; Bushnell and Rappaport, 1972; Davis, 1966; Handy and Hussain, 1969; Hare, 1967; Hartley, 1968; Kaufman, 1972; Leibowitz, Farren, and Kay, 1986; Optner, 1965; and Schuttenberg, 1972]; and change theory, consultation, and intervention theory [Arends and Arends, 1977; Argyris, 1962, 1970; Bennis, 1966; Bennis, Benne, and Chin, 1968; Blake and Mouton, 1964, 1976; Eiben and Milliren, 1976; Goodlad, 1975; Greiner, 1971; Hornstein, 1971; Lippitt, 1969, 1978; London, 1988; Martorana and Kuhns, 1975; Nadler, Nadler, and Wiggs, 1986; Tedeschi, 1972; Tough, 1982; Watson, 1967; Zurcher, 1977.)

Creating a Mechanism for Mutual Planning

One aspect of educational practice that most sharply differentiates the pedagogical from the andragogical, the mechanistic from the organismic, and the "teaching" from the "facilitating of learning" schools of thought is the role of the learner in planning. In the first half of each of the above pairs responsibility for planning is assigned almost exclusively to an authority figure (teacher, programmer, trainer). But this practice is so glaringly in conflict with the adult's need to be self-directing that a cardinal principle of andragogy (and, in fact, all humanistic and adult education theory) is that a mechanism must be provided for involving all the parties concerned in the educational enterprise in its planning. One of the basic findings of applied behavioral science research is that people tend to feel committed to a decision or activity in direct proportion to their participation in or influence on its planning and decision making. The reverse is even more relevant: People tend to feel uncommitted to any decision or activity that they feel is being imposed on them without their having a chance to influence it.

It is for this reason that the most potent HRD programs almost always have planning committees (or councils or task forces) for every level of activity: one for organization-wide programs, one for each departmental or other functional group program, and one for each learning experience. There are guidelines for selecting and utilizing these planning groups that will help to assure their being helpful and effective rather than the ineffectual nuisances that stereotypic committees so often are. (See Houle, 1960, 1989; Knowles, 1980, pp. 72–78; Shaw, 1969; Trecker, 1970.)

Merely having mechanisms for mutual planning will not suffice. Members of the planning group must be treated in good faith, with real delegation of responsibility and real influence in decision making, or the process will backfire. Avoid playing the kind of game that Skinner (1968) cites (whether with approval or not, I can't quite tell) from Rousseau's *Emile*:

> Let [the student] believe that he is always in control though it is always you [the teacher] who really controls. There is no subjugation so perfect as that which keeps the appearance of

> freedom, for in that way one captures volition itself. The poor baby, knowing nothing, able to do nothing, having learned nothing, is he not at your mercy? Can you not arrange everything in the world which surrounds him? Can you not influence him as you wish? His work, his play, his pleasures, his pains, are not all these in your hands and without his knowing it? Doubtless he ought to do only what he wants; but he ought to want to do only what you want him to do; he ought not to take a step which you have not predicted; he ought not to open his mouth without your knowing what he will say. (p. 260)

Diagnosing the Needs for Learning: Constructing a Model

Constructing a model of desired behavior, performance, or competencies is an effective vehicle for determining learning needs. There are three sources of data for building such a model: the individual, the organization, and the society.

To the cognitive, humanistic, and adult education (andragogical) theorists, the individual learner's own perception of what he or she wants to become, what he or she wants to be able to achieve, and at what level he or she wants to perform is the starting point in building a model of competencies; to the behaviorists, such subjective data are irrelevant. (And, incidentally, andragogs prefer competencies—requisite abilities or qualities—whereas the behaviorists prefer behavior—manner of conducting oneself—or performance.) It is not assumed that the learner necessarily starts out contributing his or her perceptions to the model; he or she may not know the requisite abilities of a new situation. The human resources developer has some responsibility for exposing the learner to role models he or she can observe, or providing information from external sources, so that the learner can begin to develop a realistic model for himself or herself.

Organizational perceptions of desired performance are obtained through systems analyses, performance analyses (Mager, 1972), and analyses of such internal documents as job descriptions, safety reports, productivity records, supervisors' reports, personnel appraisals, and cost-effectiveness studies.

Societal perceptions of desired performance or competencies are obtained from reports by experts in professional and technical journals, research reports, periodical literature, and books and monographs.

The model that is then used in the diagnostic process is ideally one that represents an amalgamation of the perceptions of desired competencies from all these sources, but in case of conflicting perceptions, my practice is to negotiate with the conflicting sources—usually the organization and the individual. I make no bones about the fact that there are "givens" in every situation, such as minimal organizational requirements, and that we have to accept and live with them.

Commercial firms can be hired to develop competency models. A more common (and less expensive) method is through the use of task forces composed of representatives of the individuals, the organization, and society. An elaborate model of the competencies for performing the role of human resource developer, developed by a combination of the above strategies, can be obtained from the American Society for Training and Development in Washington, D.C.

In my own experience, the excellence of the model is not the most critical factor in the contribution that competency-based education makes to the effectiveness of the learning. The most critical factor is what it does to the mind-set of the learner. When learners understand how the acquisition of certain knowledge or skills will add to their ability to perform better in life, they enter into even didactic instructional situations with a clearer sense of purpose and see what they learn as more personal. It converts course takers and seminar participants into competency developers. (For references on competency-based education, see Bette, 1975; Blank, 1982; Grant et al., 1979; Totshen, 1977.)

Assessing Discrepancies

A *learning need* can be defined as the discrepancy or gap between the competencies specified in the model and their present level of development by the learners.

According to andragogy, the critical element in the assessment of the gaps is the learners' own perception of the discrepancy between where they are now and where they want (and need) to be. So the assessment is essentially a self-assessment, with the human resource

developer providing the learners with the tools and procedures for obtaining data and making responsible judgments about their level of development of the competencies. Humanistic psychologists would urge the human resource developer to provide a safe, supportive, nonthreatening atmosphere for what could be an ego-deflating experience. Behaviorists have developed a variety of feedback-yielding tools and procedures that can be adapted to the self-assessment process.

Examples of programs that incorporate the most advanced concepts and technologies of model-building and discrepancy-assessment in industry are the ROCOM Intensive Coronary Multimedia Learning System (ROCOM, 1971), the General Electric Corporation Career Development Program (Storey, 1972), and the Westinghouse Electric Company's Executive Forum. In higher education outstanding examples are Alverno College in Milwaukee, Holland College in Prince Edward Island, the McMaster University Schools of Nursing and Medicine in Hamilton, Ontario, and the University of Georgia School of Social Work. Other sources of information about tools and procedures for diagnosing needs for learning are "Hospital Continuing Education Project" (1970, pp. 7–34); Ingalls and Arceri (1972; pp. 20–34); Knowles (1980, pp. 82–119, 1984); and Tough (1979, pp. 64–75).

FORMULATING PROGRAM OBJECTIVES

At this point we hit one of the raging controversies among theorists. Behaviorists insist that objectives are meaningless unless they describe terminal behaviors in very precise, measurable, and observable terms. Gagne (1965), for example, defines an objective as

> a verbal statement that communicates reliably to any individual (who knows the words of the statement as concepts) the set of circumstances that identifies a class of human performances.

The kind of statement required appears to be one having the following components:

1. A verb denoting observable action (*draw, identify, recognize, compute,* and many others qualify; *know, graph, see,* and others do not)
2. A description of the class of stimuli being responded to (for example, "Given the printed statement ab + ac = a (b + c)")

3. A word or phrase denoting the object used for action by the performer, unless this is implied by the verb (for example, if the verb is "draw," this phrase might be "with a ruling pen"; if it is "state," the word might simply be "orally")
4. A description of the class of correct responses (for example, "a right triangle," or "the sum," or "the name of the rule." (p. 243)

Mager (1962) gives some practical guidelines for defining objectives:

1. A statement of instructional objectives is a collection of words or symbols describing one of your educational intents.
2. An objective will communicate your intent to the degree you have described what the learner will be DOING when demonstrating his achievement and how you will know when he is doing it.
3. To describe terminal behavior (what the learner will be DOING):
   a. Identify and name the overall behavior act.
   b. Define the important conditions under which the behavior is to occur (givens and/or restrictions and limitations).
   c. Define the criterion of acceptable performance.
4. Write a separate statement for each objective; the more statements you have, the better chance you have of making clear your intent.
5. If you give each learner a copy of your objectives, you may not have to do much else. (p. 53)

Moving up the scale from the behaviorists, Taba—with a more cognitive orientation—gives "principles to guide the formulation of objectives":

1. A statement of objectives should describe both the kind of behavior expected and the content or the context to which that behavior applies.
2. Complex objectives need to be stated analytically and specifically enough so that there is no doubt as to the kind of behavior expected, or what the behavior applies to.

3. Objectives should also be so formulated that there are clear distinctions among learning experiences required to attain different behaviors.
4. Objectives are developmental, representing roads to travel rather than terminal points. [Note that at this point Taba departs sharply from the behaviorists.]
5. Objectives should be realistic and should include only what can be translated into curriculum and classroom experience.

The scope of objectives should be broad enough to encompass all types of outcomes for which the school [program] is responsible. (Taba, 1962, pp. 200–205.)

In elaboration on her last point, Taba (1962, pp. 211–228) develops a classification of objectives by types of behavior.

- Knowledge (facts, ideas, concepts)
- Reflective thinking (interpretation of data, application of facts and principles, logical reasoning)
- Values and attitudes
- Sensitivities and feelings
- Skills

Building on the thinking of Tyler (1950), as did Taba, Houle (1972, pp. 139–312) identifies these attributes of objectives.

- An objective is essentially rational, being an attempt to impose a logical pattern on some of the activities of life.
- An objective is practical.
- Objectives lie at the end of actions designed to lead to them. Objectives are usually pluralistic and require the use of judgment to provide a proper balance in their accomplishment.
- Objectives are hierarchical.
- Objectives are discriminative.
- Objectives change during the learning process.

Houle goes on to give guidelines for stating objectives. Educational objectives may be stated in terms of the desired accomplishments of the learner. Educational objectives may also be stated

in terms of the principles of action that are likely to achieve desired changes in the learner. The understanding and acceptance of educational objectives will usually be advanced if they are developed cooperatively. An objective should be stated clearly enough to indicate to all rational minds exactly what is intended. In many teaching and learning situations, but particularly in those sponsored by institutions, objectives can be stated not only in terms of the outcomes of education but also in terms of changes in the design components that will presumably make those outcomes better (facilitative objectives) (Houle, 1972, pp. 147–149).

Theorists who see learning as a process of inquiry expressly (and sometimes rather vehemently) reject the idea that there should be preset or prescribed objectives at all. Schwab (1971), for example, takes an unequivocal position.

> Educators have long been accustomed to ask at this point in a curricular discussion, "What is the intended outcome?" The question arises from the dogma that curriculums should be devised, controlled, and evaluated in the light of "objectives" taken as the leading principles. Consideration of the practical character of curriculum and instruction convinces me that this dogma is unsound . . . . I do not intend or expect one outcome or one cluster of outcomes but any one of several, a plurality. Recognizance of the several stems from consideration not of possible outcomes, but of the materials under treatment: pluralities of theory, their relations to the matter they try in their various ways to subsume, their relations to one another. (p. 540)

In his analysis of how adults actually engage in independent learning projects, Tough (1979) found that goals tended to emerge organically as part of the process of inquiry, with various degrees of clarity and preciseness, and to be continuously changing, subdividing, and spawning offspring.

Maslow, with his conception of self-actualization as the ultimate aim of learning, also sees goal formation as a highly dynamic process occurring through the interaction of the learner with his experience.

As might be expected, such a position has certain implications for helping us to understand why conventional education in the United

States falls so far short of its goals. We shall stress only one point here—namely, that education makes little effort to teach the individual to examine reality directly and freshly. Rather, it gives the person a complete set of prefabricated spectacles with which to look at the world in every aspect (e.g., what to believe, what to like, what to approve of, what to feel guilty about). Rarely is each person's individuality made much of, rarely is he or she encouraged to be bold enough to see reality in his or her own style, or to be iconoclastic or different (Maslow, 1970, p. 223).

Other theorists focus primarily on developing the skills of self-directed inquiry, holding that all other substantive learning objectives flow from the process of accomplishing this one (Allender, 1972, pp. 230–238).

Perhaps these differences in viewpoint on objectives are partly reconcilable by assigning the more terminal-behavior-oriented procedures to training and the more inquiry-process-oriented procedures to education, much the way we handled teaching models in Table 5-3. Even then, according to andragogical theory, the learner is likely to resist unless he or she freely chooses them as being relevant to his or her self-diagnosed needs. Among the most helpful treatments of the process of formulating objectives in adult education are Brookfield (1986, pp. 209–220); "Hospital Continuing Education Project" (1970, pp. 35–46); Houle (1972, pp. 136–150, 200–212); Ingalls and Arceri (1972, pp. 35–42); and Knowles (1980, pp. 120–126).

DESIGNING A PATTERN OF LEARNING EXPERIENCES

To the behaviorists, program design is essentially a matter of arranging contingencies of reinforcement so as to produce and maintain the prescribed behaviors. To cognitive and inquiry theorists, it is a matter of arranging a sequence of problems that flow according to organic stages of development, and providing appropriate resources for the solving of these problems by the learner (Bruner, 1966, pp. 71–112; Suchman, 1972, pp. 147–159). To the third-force psychologists, it is a matter of providing supportive environments (usually relatively unstructured groups) in which the participants (learners and trainers together) can help one another grow in existentially determined directions (Rogers, 1969).

Adult education theorists have tended to build design models into which aspects of all these approaches can be fitted. The three most recent are by Knowles, Tough, and Houle (in order of publication). The andragogical design model involves choosing problem areas that have been identified by the learners through self-diagnostic procedures and selecting appropriate formats (individual, group, and mass activities) for learning, designing units of experiential learning utilizing indicated methods and materials, and arranging them in sequence according to the learners' readiness and aesthetic principles. [Ingalls and Arceri, 1972, pp. 43–49; Knowles, 1980, pp. 127–154).

Tough (1979) employs the concept of a learning project consisting of a series of related episodes as his basic framework for program design. A program would consist of a number of simultaneous individual and group learning projects, each project having been collaboratively planned by learners and selected helpers and carried on at the learners' initiative. The learners could use the whole gamut of human resources (experts, teachers, colleagues, fellow students, people in the community) and material resources (literature, programmed instruction devices and software, audiovisual media) almost without regard for the theoretical orientation underlying them. Even the most didactic teacher or linear teaching machine program will be used proactively rather than reactively by a self-directed learner.

Houle (1972) has developed a fundamental system of educational design, which was described in outline in Chapter 4 and is recapitulated in graphic form in Table 5-4.

Operating the Program (Conducting Learning Activities)

This element of the program development process is concerned focally with the human resources developer's role as administrator, and learning/teaching theories have very little to say about this role. Nadler and Nadler (1970, pp. 202–231) describe the functions associated with this role, and ideas about how to carry them out andragogically are developed by Ingalls and Arceri (1972, pp. 54–62) and Knowles (1980, pp. 155–197).

I see the centrally crucial factor in program operation to be the quality of faculty resources. The current manpower sources for

teachers of HRD activities contain people who know how to teach only in the traditional pedagogical fashion, since this is the way they were taught or were taught to teach. You can't rely very much on selection procedures to provide you with good teachers. You have to train them yourself, through both pre-service and in-service educational programs. I would say that the single most critical aspect of your role as program administrator is your function as a developer of human resources development personnel. (See Knowles, 1980, pp. 159–162.)

EVALUATING THE PROGRAM

Here is the area of greatest controversy and weakest technology in all of education, especially in adult education and training. As Hilgard and Bower (1966) point out regarding educational technology in general, "It has been found enormously difficult to apply laboratory-derived principles of learning to the improvement of efficiency in tasks with clear and relatively simple objectives. We may infer that it will be even more difficult to apply laboratory-derived principles of learning to the improvement of efficient learning in tasks with more complex objectives" (p. 542). This observation applies doubly to evaluation, the primary purpose of which is to improve teaching and learning—not, as is so often misunderstood, to justify what we are doing. One implication of Hilgard and Bower's statement is that difficult as it may be to evaluate training, it is doubly difficult to evaluate education.

Donald Kirkpatrick's (Craig and Bittel, 1976, pp. 18–1 to 18–27; Kirkpatrick, 1971, pp. 88–103) conceptualization of the evaluation process is the most congruent with andragogical principles and the most practical of all the formulations seen to date. He conceives of evaluation as four steps, all of which are required for an effective assessment of a program.

The first step is reaction evaluation, getting data about how the participants are responding to a program as it takes place—what they like most and least and what positive and negative feelings they have. These data can be obtained through end-of-meeting reaction forms, interviews, or group discussions. It is usually desirable to feed back data from one session at the beginning of the next session, so that indicated program modifications can be negotiated.

The second step is learning evaluation, which involves getting data about the principles, facts, and techniques that were acquired by the participants. This step should include both pretests and posttests, so that specific gains resulting from the learning experiences can be measured. Performance tests are indicated (such as operating a machine, interviewing, speaking, listening, reading, writing, etc.) for skill learning. Either standardized or tailor-made information-recall tests or problem-solving exercises can be used to gauge knowledge. Such devices as attitudinal scales, role-playing or other simulations, or critical-incident cases may yield helpful progress in attitude-learning.

The third step is behavior evaluation, requiring data such as observers' reports about actual changes in what the learner does after the training as compared with what the learner did before. Sources of this kind of data include productivity or time-and-motion studies; observation scales for use by supervisors, colleagues, and subordinates; self-rating scales; diaries; interview schedules; questionnaires; and so on.

The fourth step is results evaluation, data for which are usually contained in the routine records of an organization—including effects on turnover, costs, efficiency, frequency of accidents or grievances, frequency of tardiness or absences, quality control rejections, and the like.

The main difficulty in evaluation, as in research, is in controlling the variables sufficiently to be able to demonstrate that it was the training that was mainly responsible for any changes that occurred. For this reason, Kirkpatrick recommends using control groups whenever possible. The more recent works on program evaluation have tended to continue and deepen this emphasis on results (Brinkerhoff, 1986; Harris and Bell, 1986; Rae, 1986; Swanson and Gradous, 1987).

All learning and teaching theorists acknowledge the importance of evaluation. Behaviorists maintain that evaluation is built into their very process—when a learner makes an error in a frame of a teaching machine program, it shows up immediately and corrective action is taken, and if a program doesn't produce the prescribed behavior, it is modified until it does. They insist that evaluation is intrinsic to their process—not something that happens at a different time from learning. To some degree, Kirkpatrick's reaction evaluation employs this principle.

Cognitive theorists stress the importance of the learner's ability to retrieve and apply information to new problems as the key to evaluation, which is what learning evaluation is essentially about. Field theorists and humanistic psychologists emphasize the translation of learning into behavior back home or in the field (the humanists, of course, stressing self-actualizing behavior), which is the purpose of behavior evaluation. Organization theorists point out that unless desirable results can be demonstrated, management will withhold support from training—which is the essence of results evaluation.

I should like to add a fifth dimension—one that springs directly from the fundamental conception of adult education as continuing education: rediagnosis of learning needs. If every learning experience is to lead to further learning, as continuing education implies, then every evaluation process should include some provision for helping the learners re-examine their models of desired competencies and reassess the discrepancies between the model and their newly developed levels of competencies. Thus, repetition of the diagnostic phase becomes an integral part of the evaluation phase.

What has been said above describes the state of the art in program evaluation until relatively recently. But starting around 1977, the leading theorists and practitioners in the field of program evaluation began making almost a 180-degree turn in their very way of thinking about evaluation. During the preceding 40 years, there had been a growing emphasis on quantitative methods of evaluation. The norm was set that if evaluation didn't have numbers and statistics attached to it, it wasn't respectable. In the late 1970s, evaluators began having second thoughts about what they were learning from their quantitative evaluations that was making so much difference in what was happening in programs. They began to realize that there is a difference between measurement and evaluation.

Evaluation, they began to report in the literature, requires getting inside the skulls of the participants—and inside the social systems in which they are performing—and finding out what is happening in their way of thinking, feeling, and doing. This is qualitative evaluation. It requires using such methods as participant observation, in-depth interviews, case studies, diaries, and other ways of getting "human" data. By getting the whole picture of "real-life" effects of a program first, they were then able to determine what quantitative data were needed to correlate real outcomes with program operations.

So now the state of the art involves both quantitative and qualitative data, but with the qualitative coming first. The results have been astounding. So much more useful information is being obtained from this combination. The best current sources of information about this new development are Cronbach (1980), Guba and Lincoln (1981), and Patton (1980, 1981, 1982). This turn of events becomes even more convincing when one realizes that all of these people made their first reputations as leaders of the quantitative evaluation movement.

Contract Learning—A Way to Put It All Together

Without question the single most potent tool I have come across in my more than half-century of experience with adult education is contact learning. It has solved more problems that plagued me during my first 40 years than any other invention. It solves the problem of the wide range of backgrounds, education, experience, interests, motivations, and abilities that characterize most adult groups by providing a way for individuals (and subgroups) to tailor-make their own learning plans. It solves the problem of getting the learner to have a sense of ownership of the objectives he or she will pursue. It solves the problem of identifying a wide variety of resources so that different learners can go to different resources for learning the same things. It solves the problem of providing each learner with a visible structure for systemizing his or her learning. Finally, it solves the problem of providing a systematic procedure for involving the learner responsibly in evaluating the learning outcomes.

I now use learning contracts in all of my academic courses and in the in-service education programs in educational institutions, industry, and the professions in which I am a consultant. Learning contracts are being used by a number of continuing professional development programs in medicine, nursing, dentistry, engineering, social work, and the ministry.

The Evolving Meaning of Human Resources Development

As I see it, human resources development is more than just a higher sounding name for what we have always done. It is not just a synonym for training or in-service education or management

development or even manpower development. If it were only this, one or more of the traditional learning theories would serve.

I am beginning to visualize human resources development as something deeper and more comprehensive than any of these concepts, and I hope that this book will stimulate others to sharpen the vision—a vision that includes McGregor's and Likert's (and others') conception of all organizations as human enterprises in their most vital essence. It includes the conception of systems theorists and organization development theorists of an organization as a dynamic complex of interacting subsystems of people, processes, equipment, materials, and ideas. It includes the conception of modern economic theorists that the input of human capital is an even more critical determinant of organizational output than material capital. It also includes the nuclear physicists' conception of an energy system that is infinitely amplifiable through the releasing of energy rather than the control of energy. It envisions the role of the human resources developer as being perhaps more crucial than any other role in determining which organizations will be alive 20 years from now and which will be extinct.

I see a drastically new role evolving for the human resource developer as we begin to conceptualize an organization as a system of learning resources. The role of human resource developers then becomes that of manager of these systems—quite a different role from that of the past, as manager of the logistics of operating training programs of courses, workshops, seminars, and other scheduled activities.

In this new role they have to ask a very different set of questions from the questions they have traditionally asked. The first question they have to ask is, "What are all of the resources in our system that are potentially available for the growth and development of people?" A typical organization will come up with a list like this:

1. Scheduled instructional activities
2. All line supervisors and managers
3. Materials and media, including packaged programs, computer programs, and the like
4. Content specialists (who often use their content specialty for work, but not for education)
5. Other individuals with special resources, including retired employees

6. Community resources, including educational institutions and commercial providers
7. Professional associations

The second question the human resource developers will then have to ask is, "How can we make more effective use of these resources for the systematic and continuous development of our people?" And some of the answers they might come up with might look like this:

1. Scheduled instructional activities could be redesigned so as to be more congruent with principles of adult learning. The resource people conducting them could be given special training on how to treat learners as adults.
2. The line supervisors and managers could be exposed to the idea that their role is not just to supervise work, but to develop their people as well. Substantial blocks of time could be built into the supervisory training and management development programs dealing with the principles of adult learning and the skills of facilitating learning. The human resources developers and their staffs could be available to the line officers as consultants in performing their role as facilitators of learning.
3. The materials and media could be selected according to their congruence with the theory of learning appropriate to the situations in which they will be used. They can be made more accessible to all the people in the system than is often the case now.
4. Information about the remaining resources—content specialists, other individuals, community resources, and professional associations—can be collected and put into a data bank, which can serve as a clearinghouse or educational brokering center. (See Heifernan, Macy, and Vickers, 1976.)
5. Learning contracts—developed as an integral part of the supervisory process—can provide the means for helping individuals make use of all these resources in a systematic program of continuous self-development.

As systems of learning resources evolve, the human resources developers must increasingly radiate a professional confidence. It will no

longer suffice to be a good learning specialist, a good administrator, and a good consultant. They will have to know more than learning specialists, administrators, and consultants know. They will have to know a new theory of human resources development and possess a new set of skills in applying that theory to their systems. How much more rewarding this role will be!

Reflection Questions

6.1 Discuss the implications of dealing with the learning process first and then content, versus dealing with content and then the learning process.

6.2 Report on a personal experience where the climate was not conducive to learning. Cite ideas from the chapter that speak directly to the situation.

6.3 Why is the idea of program/learning objectives so controversial?

6.4 Discuss the purpose and process of program evaluation and then comment on the primary evidence that you think (1) would satisfy the learner, (2) the facilitator, and (3) the agency financially underwriting the program.

PART 2

Advancements in Adult Learning

Contemporary Perspectives on Effective Adult Learning

CHAPTER 7

Andragogy in Practice

Expanding the Usefulness of the Andragogical Model

History of Andragogical Assumptions

Depending on which citation is consulted, various authors present andragogy in different ways. Accordingly, it has often been difficult to ascertain both the number and content of the core assumptions of andragogy. This difficulty stems from the fact that the number of andragogical principles has grown from four to six over the years as Knowles (1989) refined his thinking. In addition, many authors still seem to prefer to use Knowles (1980) as the core citation for his andragogical assumptions, despite the fact that he updated the list twice since then. The addition of assumptions and the discrepancy in the number cited in the literature has led to some confusion.

Table 7-1 shows the six principles (or assumptions) of the current model, as well as the ones cited in Knowles's previous works. As the table indicates, andragogy was originally presented with four assumptions, numbers 2–5 (Knowles, 1980, 1978, 1975). These first four assumptions are similar to Lindeman's four assumptions about adult education, though there is no evidence that Knowles obtained his early formulation of andragogy directly from Lindeman (Knowles, Holton, and Swanson, 1998; Stewart, 1987). Assumption number 6, motivation to learn, was added in 1984 (Knowles, 1984a)

Table 7-1
Changes in core andragogical principles

	The Adult Learner 5th ed. (Knowles, Holton & Swanson, 1998)	Adult Learner 4th ed. (Knowles, 1990)	Making of an Adult Educator (Knowles, 1989)	Adult Learner 3rd ed. (Knowles, 1984)	Andragogy in Action (Knowles, 1984)	Modern Practice of Adult Education 2nd ed. (Knowles, 1980)	Adult Learner 2nd ed. (Knowles, 1978)
Need to Know	Y	Y	Y	Y			
Learner self-concept (self-directed)	Y	Y	Y	Y	Y	Y	Y
Learner's Experience	Y	Y	Y	Y	Y	Y	Y
Readiness to Learn (life tasks)	Y	Y	Y	Y	Y	Y	Y
Orientation to Learning (problem-centered)	Y	Y	Y	Y	Y	Y	Y
Motivation to learn (internal)	Y	Y	Y		Y		

and assumption number 1, the need to know, was added in more recent years (Knowles, 1990, 1989, 1987). Thus, today there are six core assumptions or principles of andragogy (Knowles, Holton, and Swanson, 1998).

AN INDIVIDUAL-TRANSACTIONAL FRAMEWORK

Some of the sharpest criticism of andragogy has come from theorists operating from a critical philosophical perspective. Grace (1996), for example, criticizes andragogy for focusing solely on the individual and not operating from a critical social agenda or debating the relationship of adult education to society. Cross (1981) concluded that "whether andragogy can serve as the foundation for a unifying theory of adult education remains to be seen" (p. 227). Others have pushed for adult learning theory to reach beyond the teaching/learning transaction to encompass some elements of desired outcomes. Most prominent of these include perspective transformation (Mezirow, 1991) and a critical paradigm of self-directed learning (Brookfield, 1984b, 1987). Pratt (1993) also criticizes andragogy for not adopting a critical paradigm of adult learning. He concludes: "Clearly andragogy is saturated with the ideals of individualism and entrepreneurial democracy. Societal change may be a by-product of individual change, but it is not the primary goal of andragogy" (p. 21).

Andragogy's critics are correct in saying that andragogy does not explicitly and exclusively embrace outcomes such as social change and critical theory, but they are incorrect in thinking that it should. Knowles (1989, 1990) and others (Darkenwald & Merriam, 1982; Grace, 1996; Merriam & Brockett, 1997) clearly identify andragogy as being rooted in humanistic and pragmatic philosophy. The humanistic perspective, reflected by the influence of Maslow and Rogers (Knowles, 1989), is primarily concerned with the self-actualization of the individual. The pragmatic philosophy, reflected in the influence of Dewey and Lindeman on Knowles, valued knowledge gained from experience rather than from formal authority (Merriam & Brockett, 1997).

It is easy to see from its philosophical roots that andragogy is an individual-transactional model of adult learning (Brookfield, 1986). The philosophies of pragmatism, behaviorism, humanism, and

constructivism focus most of their assumptions on two dimensions: the learner and the learning transaction. Critical theory, however, is much more concerned with the outcomes of learning—namely social change (Merriam & Brockett, 1997). Knowles (1990) implicitly acknowledged this tension when he wrote of the philosophical debates between 1926 and 1948 with "one side holding that this goal [for adult education] should be the improvement of individuals, and the other holding that it should be the improvement of society" (p. 44).

As stated earlier, our view is that Knowles never intended for andragogy to be a theory of the discipline of adult education as it is defined by the critical theorists, or any of its sub-fields for that matter. Attempts to embed the specific goals and purposes of any sub-field into the andragogical model of adult learning are conceptually and philosophically flawed. Adult learning occurs in many settings for many different reasons. Andragogy is a transactional model of *adult learning* that is designed to transcend specific applications and situations. *Adult education* is but one field of application in which adult learning occurs. Others might include organizational human resource development, higher education, or any other arena in which adult learning occurs.

Furthermore, adult education is a very diverse discipline with little agreement as to its definition. For example, many definitions of adult education would incorporate human resource development as a sub-field, but few definitions of HRD label it as such. Each subfield engaged in adult learning has its own philosophical foundations regarding the role of education in society and the desired outcomes from educational activities for adults (Darkenwald & Merriam, 1982; Merriam & Brockett, 1997). For example, in HRD critical theory is only one of several theoretical frames. Unfortunately, andragogy has been critiqued mostly through the critical philosophical lens, which is only one sub-field interested in a particular type of adult learning.

The debates about the ends and purposes of adult learning events are important and vital, but they should be separated from debates about models of the adult learning process. There are real issues that each arena of adult education must debate and carefully consider. Our point is that those issues are not, and were never intended to be, part of andragogy. So, for example, scholars might debate whether organizational HRD should be approached from a critical theory or

a performance perspective—but that is *not* a debate about andragogy. We suggest that these criticisms are more relevant to *why* adult learning events or programs are conducted (i.e., their desired outcomes) than to *how* the adult learning transaction occurs, which is the more central concern of andragogy. Andragogy may not be a defining theory of *any* sub-field of adult education.

It is important to note that andragogy also does not *prohibit* combining it with other theories that speak to the goals and purposes. We now know that andragogy can be embedded within many different sets of goals and purposes, each of which may affect the learning process differently. So, for example, one could engage in adult learning for the purpose of social change (critical theory) and use an andragogical approach to adult learning. Similarly, one could engage in adult learning for performance improvement in an organization (performance/human capital theory) and use an andragogical approach.

To the extent that critical theory has become the predominant paradigm among adult education researchers, prior criticisms of andragogy point to missing elements that keep it from being a defining theory of the *discipline of adult education* (Davenport & Davenport, 1985; Grace, 1996; Hartree, 1984), not of *adult learning*. Merriam and Brockett (1997) note that "adult education can be distinguished from adult learning and indeed it is important to do so when trying to arrive at a comprehensive understanding of adult education" (p. 5). Knowles may have invited this confusion with his statements in early works that andragogy might provide a unifying theory for adult education or for all of education (Knowles, 1973, 1978)—a stance that he has since softened (Knowles, 1989).

A DYNAMIC VIEW OF ANDRAGOGY

That andragogy does not speak to all possible goals and purposes of learning is not a weakness but a strength because andragogy can then transcend arenas of application. Ironically, by focusing andragogy more narrowly on its original intent, it may become stronger and more versatile, though incomplete as a full description of adult learning in all situations. We recognize that critical theorists would likely disagree because they have a particular world view that emphasizes adult education for a certain purpose. As Podeschi (1987) points out, the debate about andragogy has been confounded

by conflicting philosophical views about adult education. It is unfortunate that andragogy has not been as heavily critiqued and researched from other philosophical perspectives as it may well be more appropriate when viewed through other philosophical lenses.

There are other theories that are similarly neutral to goals and purposes. Consider, for instance, Kurt Lewin's three-stage theory of change (unfreezing—movement—refreezing) that has long stood as one cornerstone of organization development theory. His theory also does not debate the ends or means of any particular type of change, but rather focuses simply on the change process. We could criticize Lewin's theory because it does not embrace the goals of re-engineering or of egalitarian corporate structures, for example, but it would be violating the boundaries of the theory. As Dubin (1969) notes, one critical component of any theory building effort is to define the boundaries of the theory. It seems that much of the criticism of andragogy has come from attempts to make it become more than it was intended to be, particularly within the adult education scholarly community. Such efforts violated the boundaries of the theory, and resulted in confusion and frustration.

Knowles's (1980) conception of "adult education" was broad. His definition of an adult educator was "one who has responsibility for helping adults to learn" (p. 26). He also noted that there were at least three meanings of the term *adult education*. One meaning was a broad one to describe the *process* of adult learning. A more technical meaning, he suggested, was of adult education as an *organized set of activities* to accomplish a set of educational objectives. Finally, a third meaning was a combination of the two into a *movement or a field of social practice*. In his examples, he listed everyone in what would today be called adult education, human resource development, community development, higher education, extension, library educators, and more. It seems clear that he intended for andragogy to be applicable to *all* adult learning environments.

Integrated System or Flexible Assumptions?

In early works Knowles presented andragogy as an integrated set of assumptions. However, the through years of experimentation it

now seems that the power of andragogy lies in its potential for more flexible application. As others have noted (Brookfield, 1986, Feuer and Gerber, 1988; Pratt, 1993), over the years the assumptions became viewed by some practitioners as somewhat of a recipe implying that all adult educators should facilitate the same in all situations. There is clear evidence that Knowles intended for them to be viewed as flexible assumptions to be altered depending on the situation. For example, Knowles (1979) stated early on:

> My intention, therefore, was to present an alternative set of assumptions to those that had been traditionally made by teachers of children, so that others would have another choice. I saw them as assumptions to be tested (not to be presumed), so that if a pedagogical assumption was the realistic condition in a given situation then pedagogical strategies would be appropriate. For example, if I were now, at age 66, to undertake to learn a body of totally strange content (for example, the higher mathematics of nuclear physics), I would be a totally dependent learner. I would have very little previous experience to build on, I probably would have a low degree of readiness to learn it, and I don't know what developmental task I would be preparing for. The assumptions of pedagogy would be realistic in this situation, and pedagogical strategies would be appropriate.
>
> I would like to make one caveat to this proposition, though: an ideological pedagog would want to keep me dependent on a teacher, whereas a true andragog would want to do everything possible to provide me with whatever foundational content I would need and then encourage me to take increasing initiative in the process of further inquiry. (pp. 52–53)

Knowles (1984b) reiterated this point in the conclusion to his casebook examining 36 applications of andragogy. He noted that he had spent two decades experimenting with andragogy and had reached certain conclusions. Among them were:

1. The andragogical model is a system of elements that can be adopted or adapted in whole or in part. It is not an ideology that must be applied totally and without modification. In fact, an essential feature of andragogy is flexibility.

2. The appropriate starting point and strategies for applying the andragogical model depend on the situation. (p. 418)

More recently, Knowles (1989) stated in his autobiography:

> So I accept (and glory in) the criticism that I am a philosophical eclectic or situationalist who applies his philosophical beliefs differentially to different situations. I see my self as being free from any single ideological dogma, and so I don't fit neatly into any of the categories philosophers often want to box people in. (p. 112)

He further stated that "what this means in practice is that we educators now have the responsibility to check out which assumptions are realistic in a given situation" (Knowles, 1990, p. 64).

It seems clear that Knowles always knew, and then confirmed through use, that andragogy could be utilized in many different ways and would have to be adapted to fit individual situations. Unfortunately, Knowles never offered a systematic framework of factors that should be considered when determining which assumptions are realistic in order to adapt andragogy to the situation. As a result, the andragogical assumptions about adults have been criticized for appearing to claim to fit all situations or persons (Davenport, 1987; Davenport and Davenport, 1985; Day and Baskett, 1982; Elias, 1979; Hartree, 1984; Tennant, 1986). Although a more careful read of Knowles's work shows he did not believe this, andragogy is nonetheless open to this criticism because it fails to explicitly account for the differences. Because of the conceptual uncertainty, Merriam and Caffarella (1999) go so far as to say that "andragogy now appears to be situation-specific and not unique to adults" (p. 20).

Several researchers have offered alternative contingency models in an effort to account for the variations in adult learning situations. For example, Pratt (1988) proposed a useful model of how an adult's life situation not only affects that person's readiness to learn, but also his or her readiness for andragogical type learning experiences. He recognized that most learning experiences are highly situational, and that a learner may exhibit very different behaviors in different learning situations. For example, it is entirely likely that a learner may be highly confident and self-directed in

one realm of learning, but very dependent and unsure in another. Pratt operationalized this by identifying two core dimensions within which adults vary in each learning situation: *direction* and *support*. Cross's (1981) Characteristics of Adult Learners (CAL) model also embodied a range of individual characteristics as well as some situational characteristics. Pratt (1998) discusses five different perspectives on teaching based on an international study of 253 teachers of adults. Grow (1991) also offered a contingency framework for self-directed learning.

These and others were attacking the same problem: the need for a contingency framework that avoids a "one size fits all" approach and offers more clear guidance to adult educators. It seems clear that this is one area in which andragogy has been weakest, though experienced users learned to modify it as needed. There seems to be a need to further clarify andragogy by more explicitly taking into account key factors that affect the application of andragogical principles. A more complete andragogical model of practice should direct users to key factors that affect its use in practice.

THE ANDRAGOGY IN PRACTICE MODEL

Andragogy in practice, the framework depicted in Figure 7-1, is offered as an enhanced conceptual framework to more systematically apply andragogy across multiple domains of adult learning practice. The three dimensions of Andragogy in practice, shown as rings in the figure, are (1) goals and purposes for learning, (2) individual and situation differences, and (3) andragogy: core adult learning principles. This approach conceptually integrates the additional influences with the core adult learning principles. The three rings of the model interact, allowing the model to offer a three-dimensional process for understanding adult learning situations. The result is a model that recognizes the lack of homogeneity among learners and learning situations, and illustrates that the learning transaction is a multifaceted activity. This approach is entirely consistent with most of the program development literature in adult education that in some manner incorporates contextual analysis as a step in developing programs (e.g., Boon, 1985; Houle, 1972; Knox, 1986). The following sections describe each of the three dimensions in the model.

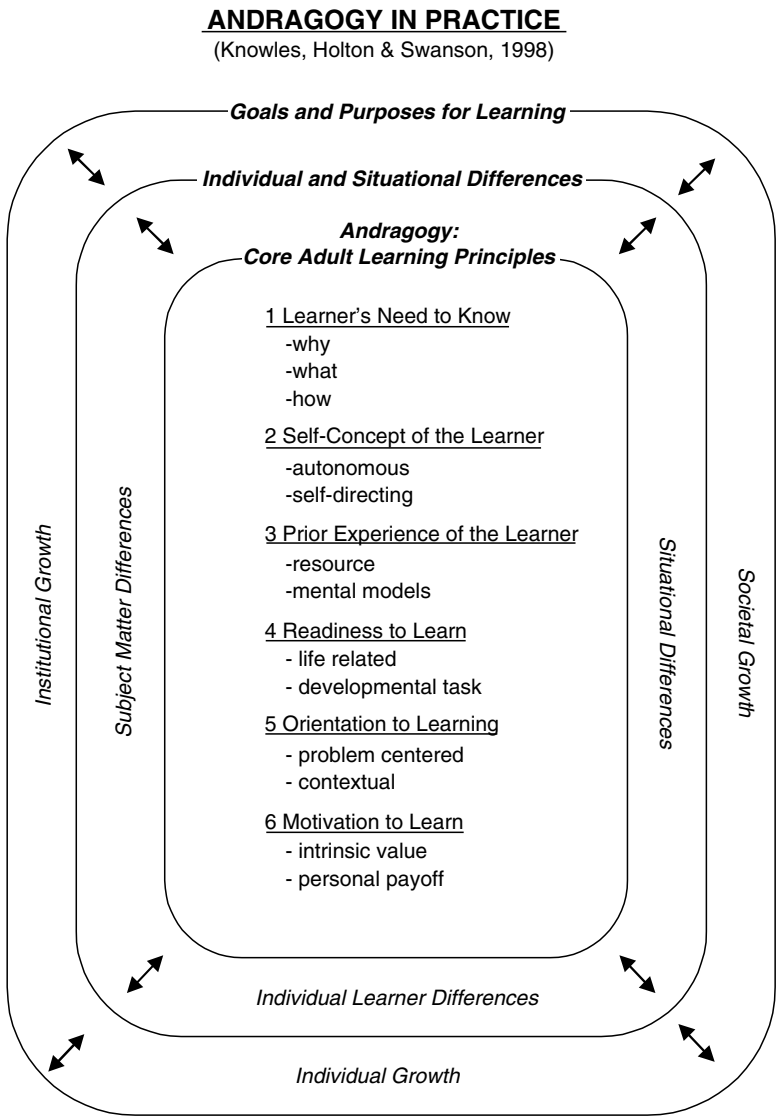

Figure 7-1. *Andragogy in practice model (from Knowles, Holton, and Swanson, 1998).*

Goals and Purposes for Learning

Goals and purposes for learning, the outer ring of the model, are portrayed as developmental outcomes. The goals and purposes of adult learning serve to shape and mold the learning experience. In this model, goals for adult learning events may fit into three general categories: *individual, institutional*, or *societal* growth. Knowles (1970, 1980) used these three categories to describe the missions of adult education, although he did not directly link them to the andragogical assumptions. Beder (1989) also used a similar approach to describe the purposes of adult education as facilitating change in society and supporting and maintaining good social order (societal); promote productivity (institutional); and enhance personal growth (individual).

Merriam and Brockett (1997) discuss seven content-purpose typologies (Bryson, 1936; Grattan, 1955; Liveright, 1968; Darkenwald and Merriam, 1982; Apps, 1985; Rachal, 1988; Beder, 1989), using Bryson's (1936) five-part typology (liberal, occupational, relational, remedial, and political) and noted that the purposes for adult learning have changed little since then. Bryson's (1936) typology would also fit into Knowles's three-part typology with liberal, relational, and remedial fitting into the individual category, occupational fitting into the institutional category, and political fitting into the societal category. Thus, Knowles's three-category typology can be seen as also encompassing all of the categories found in other major typologies of purposes for adult learning.

That so many researchers have attempted to create typologies for adult learning outcomes reinforces our position that the goals and purposes are conceptually separate from the core andragogical assumptions. As was seen in the early discussion about criticisms of the andragogical model, it is easy to attempt to imbue the core principles with value-based or philosophical dimensions of the goals and purposes. Andragogy has almost always been found lacking when examined from that perspective. That is, attempts to take a transactional model of adult learning and make it bigger have failed.

We are not suggesting that goals and purposes of the learning program do not affect the learning transaction. To the contrary, it is vitally important that they be analyzed alongside the core principles as they may influence how the core principles fit a given situation. It

is unrealistic to think that the core principles of andragogy will always fit the same in learning programs offered for different goals and purposes. However, keeping them conceptually distinct and analyzing them separately allow andragogy to accommodate multiple perspectives on learning outcomes. Also, only then can the interactions between the goals, philosophies, and contexts with the adult learning transaction be fully identified and correctly defined.

It is for that reason that Knowles (1984b, 1990) talked extensively about adapting the use of andragogy to fit the purpose of the learning event. Consider adult literacy programs as an example. Such programs may be conducted by an adult education center to help individuals improve life skills (an individual goal); by a corporation to improve job and organizational performance (an institutional goal); or by some other entity seeking to help a disadvantaged group of citizens improve their socio-economic position (a societal goal). Although the goal differs in each of these situations, the actual learning program and immediate learning outcomes (e.g., improved literacy) may be quite similar or even identical. Therefore, andragogy is equally applicable to each scenario because andragogy focuses on the learning transaction, as opposed to the overall goal for which the program is offered.

However, the goal will also likely affect the learning process. For example, when offered for societal improvement purposes, extra emphasis may be placed on developing self-directedness among the learners. When offered for work-related performance improvement, extra emphasis might be placed on relating the content to work situations. However, these changes are *not* a direct result of applying the andragogical model, but of the context in which andragogy is utilized. This illustrates the strength of andragogy: It is a set of core adult learning principles that can be applied to all adult learning situations.

Individual growth The traditional view among most scholars and practitioners of adult learning is to think exclusively of individual growth. Representative researchers in this group might include some mentioned earlier, such as Mezirow (1991) and Brookfield (1987, 1984a). Others advocate an individual development approach to workplace adult learning programs (Bierema, 1996; Dirkx, 1996). At first glance, andragogy would appear to best fit with individual development goals because of its focus on the individual learner.

Institutional growth Adult learning is equally powerful in developing better institutions as well as individuals. Human resource development, for example, embraces organizational performance as one of its core goals (Brethower and Smalley, 1998; Swanson and Arnold, 1996), which andragogy does not explicitly embrace either. From this view of human resource development, the ultimate goal of learning activities is to improve the institution sponsoring the learning activity. Thus, control of the goals and purposes is shared between the organization and the individual. The adult learning transaction in an HRD setting still fits nicely within the andragogical framework, although the different goals require adjustments to be made in how the andragogical assumptions are applied.

Societal growth Societal goals and purposes that can be associated with the learning experience can be illustrated through Friere's work (1970). This Brazilian educator saw the goals and purposes of adult education as societal transformation and contended that education is a consciousness-raising process. From his view, the aim of education is to help participants put knowledge into practice and that the outcome of education is societal transformation. Freire believed in humans' ability to re-create a social world and establish a dynamic society, and that the major aim of education is to help people put knowledge into action. Doing so, according to Friere, would enable people to change the world—to humanize it. Friere is clearly concerned with creating a better world and the development and liberation of people. As such, the goals and purposes within this learning context are oriented to societal as well as individual improvement. Once again, though, the actual adult learning transactions fit within the andragogical framework, although with some adjustments.

This perspective acknowledges that learning occurs for a variety of reasons, has outcomes beyond the individual level, and frequently is sponsored by or embedded in organizational or societal contexts (Boone, 1985; Brookfield, 1986; Knowles, 1980). Andragogy is an individual learning framework, but individual learning may occur for the purpose of advancing individual, institutional or societal growth.

Individual and Situational Differences

Individual and situational differences, the middle ring of the andragogy in practice model, are portrayed as variables. We con-

tinue to learn more about the differences that impact adult learning and that act as filters that shape the practice of andragogy. These variables are grouped into the categories of *subject-matter differences, situational differences*, and *individual learner differences*.

Subject-matter differences Different subject matter may require different learning strategies. For example, individuals may be less likely to learn complex technical subject matter in a self-directed manner. Or, as Knowles stated in the earlier quote, introducing unfamiliar content to a learner will require a different teaching/learning strategy. Simply, not all subject matter can be taught or learned in the same way.

Situational differences The situational effects category captures any unique factors that could arise in a particular learning situation and incorporates several sets of influences. At the micro-level, different local situations may dictate different teaching/learning strategies. For example, learners in remote locations may be forced to be more self-directed, or perhaps less so. Or, learning in large groups may mean that learning activities are less tailored to particular life circumstances.

At a broader level, this group of factors connects andragogy with the socio-cultural influences now accepted as a core part of each learning situation. This is one area of past criticism that seems particularly appropriate. Jarvis (1987) sees all adult learning as occurring within a social context through life experiences. In his model, the social context may include social influences prior to the learning event that affect the learning experience, as well as the social milieu within which the actual learning occurs. Thus, situational influences prior to the learning event could include anything from cultural influences to learning history. Similarly, situational influences during learning can be see as including the full range of social, cultural, and situation-specific factors that may alter the learning transaction.

Individual differences In the last decade there has been a surge of interest in linking the adult education literature with psychology to advance understanding of how individual differences affect adult learning. Tennant (1997) analyzes psychological theories from an adult learning perspective and argues for psychology as a foundation discipline of adult education. Interestingly, a group of educational psychologists have recently argued for building a bridge

between educational psychology and adult learning, calling for creation of a new sub-field of adult educational psychology (Smith and Pourchot, 1998).

This may be the area in which our understanding of adult learning has advanced the most since Knowles first introduced andragogy. A number of researchers have expounded on a host of individual differences affecting the learning process (e.g., Dirkx and Prenger, 1997; Kidd, 1978; Merriam and Cafferella, 1999). This increased emphasis on linking adult learning and psychological research is indicative of an increasing focus on how individual differences affect adult learning. From this perspective, there is no reason to expect all adults to behave the same, but rather our understanding of individual differences should help to shape and tailor the andragogical approach to fit the uniqueness of the learners. It is somewhat ironic that andragogy first emerged as an effort to focus on the uniqueness between adults and other learners. Now, we know that andragogy must be further tailored to fit the uniqueness among adults.

It is beyond the scope of this chapter to delineate all the individual differences that may affect learning. However, Jonassen and Grabowski (1993) present a typology of individual differences that affect learning which incorporates three broad categories of individual differences: *cognitive* (including cognitive abilities, controls, and styles), *personality*, and *prior knowledge*. Table 7-2 shows their list of individual differences that may have an impact on learning.

Although there remains much uncertainty in the research, the key point is clear—individuals vary in their approaches, strategies, and preferences during learning activities. Few learning professionals

Table 7-2
Individual Learner Differences (Jonassen & Grabowski, 1993)

COGNITIVE
1. General Mental Abilities
• Hierarchical abilities (fluid, crystallized, and spatial)
2. Primary Mental Abilities
• Products
• Operations
• Content

Table 7-2
Individual Learner Differences (Jonassen & Grabowski, 1993)—*cont'd*

3. Cognitive Controls
   - Field dependence/independence
   - Field articulation
   - Cognitive tempo
   - Focal attention
   - Category width
   - Cognitive complexity/simplicity
   - Strong vs. weak automatization
4. Cognitive Styles: Information gathering
   - Visual/haptic
   - Visualizer/verbalizer
   - Leveling/sharpening
5. Cognitive Styles: Information organizing
   - Serialist/holist
   - Conceptual style
6. Learning Styles
   - Hill's cognitive style mapping
   - Kolb's learning styles
   - Dunn and Dunn learning styles
   - Grasha-Reichman learning styles
   - Gregorc learning styles

PERSONALITY

7. Personality: Attentional and engagement styles
   - Anxiety
   - Tolerance for unrealistic expectations
   - Ambiguity tolerance
   - Frustration tolerance
8. Personality: Expectancy and incentive styles
   - Locus of control
   - Introversion/extraversion
   - Achievement motivation
   - Risk taking vs. cautiousness

PRIOR KNOWLEDGE

9. Prior knowledge
   - Prior knowledge and achievement
   - Structural knowledge

would disagree. At one level, merely being sensitive to those differences should significantly improve learning. Even better, the more that is understood about the exact nature of the differences, the more specific learning theorists can be about the exact nature of adaptations that should be made.

Another area of individual differences in which our understanding is expanding rapidly is adult development. Adult development theories are generally divided into three types: physical changes; cognitive or intellectual development; and personality and life-span role development (Merriam and Cafferella, 1999; Tennant, 1995). Cognitive development theory's primary contributions are twofold. First, they help to explain some differences in the way adults learn at different points in their lives. Second, they help to explain why the core learning principles are exhibited in different ways at different points in life. Life-span role development theory's primary contribution is to help explain when adults are most ready for and most need learning, and when they may be most motivated to learn.

An understanding of individual differences helps make andragogy more effective in practice. Effective adult learning professionals use their understanding of individual differences to tailor adult learning experiences in several ways. First, they tailor the manner in which they apply the core principles to fit adult learners' cognitive abilities and learning style preferences. Second, they know which of the core principles are most salient to a specific group of learners. For example, if learners do not have strong cognitive controls, they may not initially emphasize self-directed learning. Third, they expand the goals of learning experiences. For example, one goal might be to expand learners' cognitive controls and styles to enhance future learning ability. This flexible approach explains why andragogy is applied in so many different ways (Knowles, 1984b).

APPLYING THE ANDRAGOGY IN PRACTICE FRAMEWORK

The andragogy in practice framework is an expanded conceptualization of andragogy that incorporates domains of factors that will influence the application of core andragogical principles. We turn now to an example to illustrate how to use the andragogy in practice model.

As a general note, we have observed interesting differences in the way people apply the model and therefore explain it. Those familiar with the six core principles of andragogy tend to want to conceptually begin in the middle of the model, working outward to adjust the six principles to fit the individual and situational differences as well as differences due to the goals and purposes. For them, the outer two rings act as "filters" through which the core principles are examined to make adjustments. Those unfamiliar with the six principles seem to prefer to start with the outer ring and work inward. For these individuals, it makes more sense to analyze the goals and purposes first, then the individual and situational differences, and finally to adjust their application of the core principles to fit the full context.

Both perspectives have merit, depending on the application. We suggest a three-part process for analyzing adult learners with the andragogy in practice model:

1. The core principles of andragogy provide a sound foundation for planning adult learning experiences. Without any other information, they reflect a sound approach to effective adult learning.
2. Analysis should be conducted to understand (a) the particular adult learners and their individual characteristics, (b) the characteristics of the subject matter, and (c) the characteristics of the particular situation in which adult learning is being used. Adjustments necessary to the core principles should be anticipated.
3. The goals and purposes for which the adult learning is conducted provide a frame that shapes the learning experience. They should be clearly identified and possible effects on adult learning explicated.

This framework should be used in advance to conduct what we call *andragogical learner analysis*. As part of needs assessment for program development, andragogical learner analysis uses the andragogy in practice model to determine the extent to which andragogical principles fit a particular situation. Figure 7-2 is a worksheet created for this purpose. The six core assumptions are listed in the left-hand column and comprise the rows in the matrix. Each of the two outer rings and the six groups of factors contained within

the andragogy in practice model are shown in the other six columns. Thus, each cell of the matrix represents the potential effect of one of the factors on a core assumption.

The analyst using the andragogical lens should first assess the extent to which the andragogical assumptions fit the learners at that point in time and check the appropriate ones in column 2. Then, he or she must determine the extent to which each of the six groups of factors would impact on each of the six core assumptions. That impact might be to make it more important, less important, not present in the learner group, and so on. Deviations and potential changes should be noted in the appropriate cell of the matrix. When used for this purpose, it is probably best to start with the outer ring and work inward. On the other hand, if one does not have much of an opportunity to analyze the learners in advance, then it may be more appropriate to begin the program with the core principles as a guide, and make adjustments as the other elements of the model become known.

Case Example 1: Adult Basic Education Program

Case example 1 shows an andragogical learner analysis for a classic adult basic education case. In this case, the learners are disadvantaged citizens who lack the basic literacy skills to obtain well-paying jobs. They have been struggling in life, holding minimum wage or close to minimum wage jobs because of low reading and math skills. They are enrolled in a workplace literacy program to improve their literacy skills in the hopes that they can obtain better jobs to improve their individual lives. The goal of the program is clearly an individual life improvement goal, although the funding agency's goal is a community development goal.

The andragogical learner analysis shows that learners generally fit the core assumptions of the andragogical model (see Figure 7-3). However, assumption number 2, self-directedness of the learners, is the weakest because the learners have a history of not being successful in similar learning situations and lack confidence as learners when it comes to reading and math. Fortunately, they have exhibited successful learning in other parts of their lives so the potential for self-directedness exists, but they will need strong support initially. Their motivation is high because they are trapped in low-wage jobs and are anxious to improve their lives, but their prior experiences

Andragogical Principle	Applies to these learners?	Expected Influence of					
		Individual and Situational Differences			Goals and Purposes for Learning		
		Subject matter	Individual learner	Situational	Individual	Institutional	Societal
1) Adults need to know why they need to learn something before learning it.							
2) The self-concept of adults is heavily dependent upon a move toward self-direction.							
3) Prior experiences of the learner provide a rich resource for learning							
4) Adults typically become ready to learn when they experience a need to cope with a life situation or perform a task							
5) Adults orientation to learning is life-centered; education is a process of developing increased competency levels to achieve their full potential.							
6) The motivation for adult learners is internal rather than external.							

Figure 7-2. *Worksheet for andragogical learner analysis.*

Andragogical Principle	Applies to these learners?	Expected Influence of					
		Individual and Situational Differences			Goals and Purposes for Learning		
		Subject matter	Individual learner	Situational	Individual	Institutional	Societal
1) Adults need to know why they need to learn something before learning it.	✍	Some basic subject matter may not seem relevant to life needs			Participants need to build better basic skills to raise their standard of living thru better jobs		The work place literacy program is designed to help reduce the number of disadvantaged workers in the community.
2) The self-concept of adults is heavily dependent upon a move toward self-direction.	✍	Unfamiliar subject matter	Low confidence in self-directed learning capability; will need high support initially				
3) Prior experiences of the learner provide a rich resource for learning	✍	Prior experience may be a barrier to learning because they have not been successful learners in traditional education					
4) Adults typically become ready to learn when they experience a need to cope with a life situation or perform a task	✍			Most participants are struggling with finding jobs that pay a decent wage due to their poor skills			
5) Adults' orientation to learning is life-centered; education is a process of developing increased competency levels to achieve their full potential.	✍	Will need to make basic subjects highly life relevant					
6) The motivation for adult learner is internal rather than external.	✍			High motivation to learn due to economic difficulties			

Figure 7-3. *Andragogical learner analysis.*

with this type of learning could be a significant barrier to learning if self-directed learning is thrust upon them too quickly. However, they are judged to be highly pragmatic learners; assumption number 5 (life-centered orientation to learning) is expected to be particularly important in that the learning will have to be highly contextualized in work and life situations. Thus, the instructors have chosen not to use traditional GED-type learning and instead will use work-based experiential learning techniques to keep motivation high.

Case Example 2: Management Development Program

In case example 2, a municipal government has developed a new management development program to help change the organization to a high-performance workplace. It was developed based on best practices and thinking in performance improvement leadership. Figure 7-4 shows the andragogical learner analysis form completed for this scenario.

An analysis of the learners indicates that they generally fit the core assumptions of the andragogical model (check marks in column 2). This presents several problems because the program cannot be conducted in a completely andragogical approach (comments that follow are noted in the appropriate cell in Figure 7-4). First, the ultimate goal of the program is to enhance organizational performance. Thus, learners will not have as much choice about the content of the learning (goal factor). It was determined that considerable effort will have to be devoted to convincing the learners of the "need to know" because some may not perceive they need the program. Second, most of the learners are experienced managers who consider themselves to be reasonably accomplished at their jobs. However, the program will challenge learners' mental models of management development as it presents a new approach to managing in the public sector. Thus, their prior experience could actually be a barrier to learning (individual difference factor). Next, it was determined that few of them had engaged in self-directed learning with regard to management issues. This fact, coupled with the unfamiliarity of the material, will make self-directed learning unlikely, at least in the early stages of the program. Further complicating the design is that there is likely to be little formal payoff because public sector employment systems do not allow for performance or skill-based pay

Andragogical Principle	Applies to these learners?	Expected Influence of					
		Individual and Situational Differences			Goals and Purposes for Learning		
		Subject matter	Individual learner	Situational	Individual	Institutional	Societal
1) Adults need to know why they need to learn something before learning it.	✍					Learners may not perceive they need program so must work harder here	
2) The self-concept of adults is heavily dependent upon a move toward self-direction.	✍			Few have engaged inself-directed learning on management issues			
3) Prior experiences of the learner provide a rich resource for learning	✍	Prior experiences may be a barrier to learning because new program is very different					
4) Adults typically become ready to learn when they experience a need to cope with a life situation or perform a task	✍	Will have to convince learners of the value of the new learning				Need for program is not immediately apparent in their everyday jobs	
5) Adults' orientation to learning is life-centered; education is a process of developing increased competency levels to achieve their full potential.	✍	New material may be complex and unfamiliar; learners may feel threatened					
6) The motivation for adult learners is internal rather than external.	✍			No formal rewards in public sector for participating so will have to depend on internal motiv.			

Figure 7-4. *Andragogical learner analysis form completed.*

increases (a situational factor). Much of the "payoff" will be intrinsic, and learners will have to be convinced of the value. Finally, the subject matter itself will shape the learning. The approach being taught relies on a complex integration of theories and would be unfamiliar to these managers. Thus, some portions of the program may be more didactic than others (subject-matter factor).

This example illustrates how andragogy becomes more powerful by explicitly accommodating contingencies present in most adult learning situations. It is difficult to explicate the precise mechanisms by which the factors in the outer ring will influence application of the core assumptions because of the complex ways in which they interact. But andragogical learner analysis based on the andragogy in practice framework provides practitioners a structured framework within which to consider key ways in which andragogy will have to be adapted.

Summary

What we have offered in this chapter is a clarified conceptualization of the andragogical model of adult learning that more closely parallels the way andragogy is applied in practice and, we believe, is closer to Knowles's original intent. The *andragogy in practice* model expands andragogy's utility by (1) conceptually separating the goals and purposes of learning from the core andragogical principles of the learning transaction so the interactions and adaptations can be more clearly defined, and (2) explicitly accounting for individual, situational, and subject matter differences in the learning situation.

This is not an attempt to re-ignite previous debates about andragogy or to suggest that andragogy should be the single defining model of adult learning. Rather, we tend to agree with Merriam and Cafferella (1999), who said: "We see andragogy as an enduring model for understanding certain aspects of adult learning. It does not give us the total picture, nor is it a panacea for fixing adult learning practices. Rather, it constitutes one piece of the rich mosaic of adult learning" (p. 278). Our understanding of Knowles's work suggests that is entirely consistent with his views. To the extent that andragogy is the right model of adult learning in a given situation, the andragogy in practice framework should improve its application.

As some critics have pointed out, andragogy has not been well tested empirically (Grace, 1985; Pratt, 1993). However, the reality is that none of the prominent theories or models of adult learning have been well tested empirically (Caffarella, 1993; Clark, 1993; Hiemstra, 1993; Merriam and Caffarella, 1999) and all, including andragogy, are in need of more research. Knowles (1989) himself acknowledged in his autobiography that he no longer viewed andragogy as a complete theory: "I prefer to think of it as a model of assumptions about adult learning or a conceptual framework that serves as a basis for emerging theory" (p. 112).

However, such research should not ask questions about andragogy that are outside its intended theoretical frame. Thus, we have offered some alternative perspectives that should help guide future research. It is important that andragogy be evaluated from multiple perspectives. Further research is needed to more explicitly define how the andragogical principles will be affected as different factors change.

We see this as an initial attempt to clarify how andragogy can be a more realistic, and therefore useful, approach to adult learning.

REFLECTION QUESTIONS

7.1 Discuss the ideas of adult learning and adult education and the implication of the differences.

7.2 Do you see andragogy's focus on the learning transaction versus the goals and content of adult learning as a strength or a weakness? Discuss your position.

7.3 Discuss the utility of the andragogy in practice figure from a practitioner perspective.

7.4 Discuss the case examples by simply changing two of the specific influences (two of the cells) that could radically impact on the learning approach to be taken.

CHAPTER 8

Adult Learning Within Human Resource Development

The disciplines of human resource development (HRD) and adult education (AE) both view the process of adult learning as being central to their theory and practice. Even so, the purposes of HRD and AE differ, and their perspective on adult learning differs. The core difference is related to control of the goals and purposes for which adult learning is employed—organizational versus individual control. This chapter looks closely at HRD, the role of adult learning within HRD, and the issue of control.

Human Resource Development Goals

Human resource development professionals are in general agreement as to their goals. Most take the position that HRD should focus on increasing the performance requirements of its host organizations through the development of the organization's workforce (ASTD-USDL, 1990; Knowles, 1990; McLagan 1989; Swanson, 1995).

Others believe HRD should focus on individual development and personal fulfillment without using organizational performance as the measure of worth (Dirkx, 1996). Yet, it is the increase in performance resulting from HRD that justifies its existence. From either perspective, the question of contribution always comes into play.

Holton (1998) provides a very useful taxonomy of "performance outcomes" and "performance drivers" that accommodates the gap between those focused on the organization first and then the individual versus those focused on the individual first and then the organization. He informs HRD professionals to pay attention to both *performance outcomes* and *performance drivers*. Thus, organization *performance*, such as high-quality services delivered to external customers, can be logically connected to *performance drivers*, such as learning and process improvement (see Chapter 17 for a more complete explanation).

When practiced within productive organizations, human resource development should strive to contribute directly to the host organization's goals. The host organization is a purposeful system that must attain effective and efficient survival goals. Consequently, it is the responsibility of HRD to focus on those goals as well as individual employee goals.

Human resource development can be thought of as a sub-system that functions within the larger organizational system. An *organization* is defined as a productive enterprise having a mission and goals (Holton, 1997). Additionally, an organization is system, with definable inputs, processes, outputs, parts, and purposes (Rummler and Brache, 1995). Contemporary HRD literature consistently talks of linking HRD to the strategic goals of the organization (see, for example, Gill, 1995). If HRD is to be respected and useful in organizations, it must position itself as a strategic partner and achieve the same level of importance as traditional core organizational processes, such as finance, production, and marketing (Torraco and Swanson, 1995). To gain an understanding of the purpose of the HRD sub-system, the goals of the larger system in which it operates should be considered.

Of the scarce resources that organizations must procure and allocate, perhaps none is more important to the success of the firm than human resources (Edvinsson and Malone, 1997). A major expenditure for most organizations is tied directly to workers, including wages, benefits, and HRD (Becker, 1993; Noe et al., 1994). And although human resources are unique in that people have feelings, make plans, support families, and develop communities, they are in some ways similar to other resources: Firms expect a return on the money invested in their employees (Cascio, 1987). Unless workers

contribute to the profitability and viability of an organization, it would make economic sense to invest the money elsewhere. Even in nonprofit organizations, employees must contribute meaningfully to organizational goals that are essential to survival, even though those goals are not stated in dollars of profit.

The purpose of reviewing this basic reality of organizational survival is not to paint an unfeeling picture of the workplace in which people are merely cogs in a mechanistic machine. There are numerous examples of companies that meet their organizational goals that are also among the most progressive in terms of employee treatment and relations (Levering and Moskowitz, 1994). Nowhere has it been shown that organizational success should be in direct conflict with employee happiness and well-being.

Performance, then, is defined as the *organizational system outputs that have value to the customer in the form of productivity attributable to the organization, work process, and/or individual contributor levels*. Using this definition, performance is the means by which organizations measure their goals. Performance can be measured in many ways: rate of return, cycle time, and quality of output are three such possibilities. Additionally, it is important to make the distinction between levels of performance. Performance takes place and can be measured at the organizational, process, and individual levels.

If HRD is to be aligned with the goals and strategies of the organization, and performance is the primary means by which the goals and strategies of organizations are realized, then it follows that HRD should be first and foremost concerned with maintaining and/or improving performance at the organizational, process, and individual levels. If HRD is to be a value-added activity of the firm (instead of a line item of cost that is to be controlled and minimized), then HRD practitioners must be concerned about performance and how it enables organizations to achieve their goals.

HRD and Performance Improvement

How can HRD improve performance? There are many possibilities at the individual, process, and organizational levels. Figure 8-1 is a matrix of performance levels and variables that can aid in the diagnosis of performance problems (Swanson, 1996, p. 52). Within

PERFORMANCE VARIABLES	PERFORMANCE LEVELS		
	Organizational Level	**Process Level**	**Individual Level**
Mission/Goal	Does the organization's mission/goal fit the reality of the economic, political, and cultural forces?	Do the process goals enable the organization to meet organizational and individual missions/goals?	Are the professional and personal mission/goals of individuals congruent with the organization's?
System Design	Does the organizational system provide structure and policies supporting the desired performance?	Are processes designed in such a way to work as a system?	Do individuals face obstacles that impede their job performance?
Capacity	Does the organization have the leadership, capital, and infrastructure to achieve its mission/goals?	Does the process have the capacity to perform(quantity, quality, and timeliness)?	Does the individual have the mental, physical, and emotional capacity to perform?
Motivation	Do the policies, culture, and reward systems support the desired performance?	Does the process provide the information and human factors required to maintain it?	Does the individual want to perform no matter what?
Expertise	Does the organization establish and maintain selection and training policies and resources?	Does the process of developing expertise meet the changing demands of changing processes?	Does the individual have the knowledge, skills, and experience to perform?

Figure 8-1. *Performance diagnosis matrix of enabling questions.*

each cell are enabling questions that permit diagnosis of performance, but each cell can also serve as a conceptual framework for classifying performance interventions.

As an example, the mission/goal variable at the organizational level asks whether the organization's mission and goals fit various internal and external realities. If they do not, then most likely performance is being impeded. Assume that an organization's mission and goals do not fit the reality of its culture and this is resulting in

sub-optimized performance. HRD could attempt to solve this performance problem through structured intervention in a couple of ways, depending on the outcomes of detailed analysis. A process could be put in place to formulate mission and goals that accommodate the organizational culture. On the other hand, a cultural change process could be implemented to modify the culture so that it is better aligned with the mission and goals of the organization. This example and the performance diagnosis matrix show that numerous impediments to performance, and consequently numerous challenges and opportunities for HRD to improve performance, exist.

When business and industry leaders talk about the high values of core competence to the life of their companies, they are talking primarily about knowledge and expertise that fits within and between the 15 cells in the performance diagnosis matrix. This learning can also be categorized as public knowledge, industry-specific knowledge, or firm-specific knowledge that is critical to sustaining organizational performance (Leonard-Barton, 1995, p. 21).

Notice that *adult learning* plays an important role in most, if not all, of the matrix cells. Just getting to the point of doing the work in each diagnostic cell of the organizational system requires much to be learned in order to understand and operate within and between these cells. For example, if HRD is to change culture, then certainly the principles and practices of adult learning will play an important role as employees develop and learn new norms. Most process improvement strategies embrace some form of self-directed teams that examine their work processes and learn better ways to perform them. Building leadership capacity is a learning process. In organizations where innovation is a key performance driver, learning becomes central to survival (Senge, 1990; Watkins and Marsick, 1993). It is not difficult to see that there are potential needs for adult learning within every cell of the performance diagnosis matrix.

One important strategic role for HRD is to build the organization's strategic capability—the knowledge and expertise required to figure out the present and to develop rational scenarios of the future and ways to connect them (Torraco and Swanson, 1995). Adult learning, from this perspective, is critical in order to maintain the performance of an existing system and to improve on that system. Increasingly, it is an organization's intellectual capital that leads to sustained competitive advantage (Edvinsson and Malone, 1997;

Stewart, 1997). Adult learning becomes a powerful organizational improvement strategy when it is embedded in a holistic performance improvement system framework.

HRD AND ADULT LEARNING

The issue of control—organizational versus individual—is useful in exploring the role of adult learning in HRD. Cervero and Wilson help in their book, *Planning Responsibly for Adult Education: A Guide to Negotiating Power and Interests* (1994), by noting that the AE (adult education) literature has been "focused on technical, 'how to' skills, while presupposing some ideally neutral staging area in which these skills will be exercised, and have remained surprisingly silent on the troublesome issues of 'what for' and 'for whom.'" They go on to speak more forcefully, "Which people get to decide the purpose, content, and format of the program? Is it always the people with the most power? Is it the adults who will participate in the program, the leadership of the institution sponsoring the program, or the planners themselves?" (Cervero and Wilson, 1994, p. xii).

So what is the relationship between HRD and adult learning? Swanson (1996) defines *human resource development* as a process of developing and/or unleashing human expertise through organizational development and personnel training and development for the purpose of improving performance at the organization, work process, and individual levels. McLagan (1989) offers an earlier definition of HRD along similar lines: the integrated use of training and development, organizational development and career development to improve individual, group, and organizational effectiveness. In both definitions, it is apparent that the outcome of HRD is *performance improvement*. It should be equally apparent that *learning*—knowledge and expertise—is a core component of HRD but not the whole of HRD.

Human resource development is broader than training or adult learning. There are HRD interventions that involve much more than training or learning activities, and some can have no planned educational component. This aspect of HRD falls in the "unleashing" element of the definition. For example, HRD might be involved in improving a business process intended to result in a newly engineered business process and minor work method modifications that

are transparent to the worker. They could require no formal learning effort to implement. If training were required, it would be a relatively small part of the entire intervention. One could attempt to argue that the HRD work to improve the process involves acts of learning and is therefore adult learning. The rebuttal is that the desired outcome is to improve the process rather than the learning in individuals working in the business process.

These remarks should not be construed as an argument that the discipline of AE is a subset of HRD. It is not. Although adult learning takes places in both HRD and AE and both are deeply committed to adult learning, HRD and AE are discrete disciplines. Their area of intersection occurs within adult learning. When adult learning outcomes and learning process decisions about individuals are bounded by rules and requirements of the organization, adult learning is HRD. When the adult learning outcomes and learning process rules and requirements are located in the individual, it is AE. The core difference is in the idea of control. If the organization retains the authority to approve or disapprove learning interventions, the control is with the organization, and therefore it is HRD. To the point that control is overtly and formally shared, the learning process is both AE and HRD (Swanson and Arnold, 1996). For example, Robinson and Stern (1997) offer vivid illustrations of two essential elements that foster corporate creativity and encourage employees to control their learning journey. They speak of "self-initiated activity" (an activity performed by an individual who is not asked to do it) and "unofficial activity" (an activity performed by an individual over a period of time in which he continues to work on his learning journey without direct official recognition and/or support) and the benefits organizations gain by allowing these to take place among workers.

Thus, some HRD processes and interventions do not focus on adult learning. By the same token, AE does not always take place in the context of organizations for the purpose of performance improvement. The outcome of AE can be personal growth, general knowledge, or even amusement.

For HRD, adult learning focuses on development interventions that have two attributes: First, the context is organizational, and second, the desired outcome is learning—knowledge and expertise—that will impact the performance goals of the host organization.

Facilitating adult learning in performance-oriented organizations often creates a tension between the assumptions underlying andragogical practice and the organization's performance requirements. For many, best adult education practices allow maximum individual control and appeal directly to the needs most meaningful to the individual (Hiemstra and Sisco, 1990). When the individual's needs are consistent with the organization's needs, there is no tension. When the individual's needs and goals are not congruent with the organization's performance requirements, and the organization is providing the required learning experience, a tension exists and inevitably results in some degree of organizational control.

For this reason, learning professionals in HRD must balance practices that lead to the most effective adult learning with those that will lead to performance outcomes. When learning is required, performance will be compromised if effective adult learning principles are not incorporated. However, learning will also be compromised without an emphasis on performance principles because the learning opportunities will likely be discontinued if performance outcomes are not achieved.

Effective HRD professionals have the ability to find the optimum balance in each situation. Fortunately, the majority of learning situations present no problem. In many cases, the best interests of the employee and the organization can be met at the same time. This is especially true in organizations that link employee career advancement to performance so that employees' lives are enhanced as the organization's performance improves.

But there are other instances where adult learning principles can not be wholly implemented. Consider organizational change, for example. Can a large organization in a survival mode allow individuals the freedom to choose whether they want to learn a new way to run the organization? Hardly. Can an organization continue to invest in learning programs for its employees that do not lead to performance improvement over the long run? No.

In summary, HRD has a great concern to create more humane organizations. However, by definition, HRD must ensure that the organization's performance improvement needs are met. At certain points, this is likely to lead to some adaptation and compromise of the core andragogical principles. Effective application of adult learning principles in HRD requires practitioners to become comfortable

with, and even embrace, the tension between adult learning and performance principles.

The Premise of Individuals Controlling Their Own Learning

One of the most popular ideas in AE is that individuals want to have control over their learning based on their personal goals and that learning will increase as a result. The idea is that better outcomes result when the learner retains control throughout the learning phases. There is controversy related to this idea of how much control individual learners want and can handle.

During the 1980s there was considerable discussion about embracing self-directed learning as a unifying theory and goal for the discipline of AE. Even one of the leading proponents, Stephen Brookfield (1988), acknowledged that self-directed learning is far more complex than first proposed, and that the push in AE to embrace self-directed learning was motivated in part by the discipline's search for an identity and unifying theory.

The point of this discussion is not to enter the AE debate about self-directed learning. It must be recognized that the core assumptions of andragogy do not raise learner self-directedness to the same high level as has been proposed by many AE theorists and practitioners. Andragogy suggests that adults have a *self-concept* of being responsible or their own lives and expect others to treat them as being capable of self-direction (see Chapter 4). Adult education suggests that the purpose of learning should be to develop self-directed learning capacity in adults (Brookfield, 1986). The self-concept principle in adult learning theory has consistently been confused with the democratic humanism goals of AE that all adults become self-directing. The first is a *characteristic of adults*, the latter a *purpose for learning*. This should not be interpreted to say that the AE goals are wrong, but rather that the core learning principle of independent self-concept must be considered separately from the goals and purposes of AE. It is the latter that has falsely made HRD look inconsistent with adult learning principles. Human resource development practice is generally in harmony with the andragogical notion of independent "self-concept," but clearly does not share the goals and purposes of AE.

Because HRD focuses on performance outcomes, the significance of learner control is viewed as secondary by most professionals in HRD. The AE reaction to the performance focus rests with the concern that the feelings and worth of human beings as individuals are ignored by too much emphasis on bottom-line results. And, there is evidence that learning, or enhancing the capacity to learn, is a valuable outcome in and of itself and that sponsoring organizations logically benefit (Robinson and Stern, 1997). Thus, the line is sometimes falsely drawn between those who view HRD as tied to business goals and focused on the bottom line and those who would like to take a more humanistic stance in the matter. In fact, HRD shares concerns for a humanistic workplace, has *adult learning* as one of its core components, but also embraces organizational performance theory. The gap is not as wide as some would portray it to be.

THE PHASES OF THE ADULT LEARNING PLANNING PROCESS

Adult learning is defined as *the process of adults gaining knowledge and expertise*. Additionally, the ideas that (1) learners universally want to have control over their learning process and (2) learning increases as a result comes from AE. Adult learning theory takes a more situational stance on shared control.

Just what are the issues surrounding this core idea of learners controlling their own learning process? A contradiction exists between the AE ideal of individuals taking control of their learning and the reality of adult limitations in taking control of their own decision making. The following sections discuss the practical issues facing HRD as it relates to adults directing their own learning at the needs, creation, implementation, and evaluation planning phases.

Figure 8-2 provides the framework for this discussion. It shows the four phases of the adult learning planning process and an outer ring of theory. The four phases are:

- *Need*. Determine what learning is needed so as to achieve goals.
- *Create*. Create a strategy and resources to achieve the learning goal(s).
- *Implement*. Implement the learning strategy and use the learning resources.

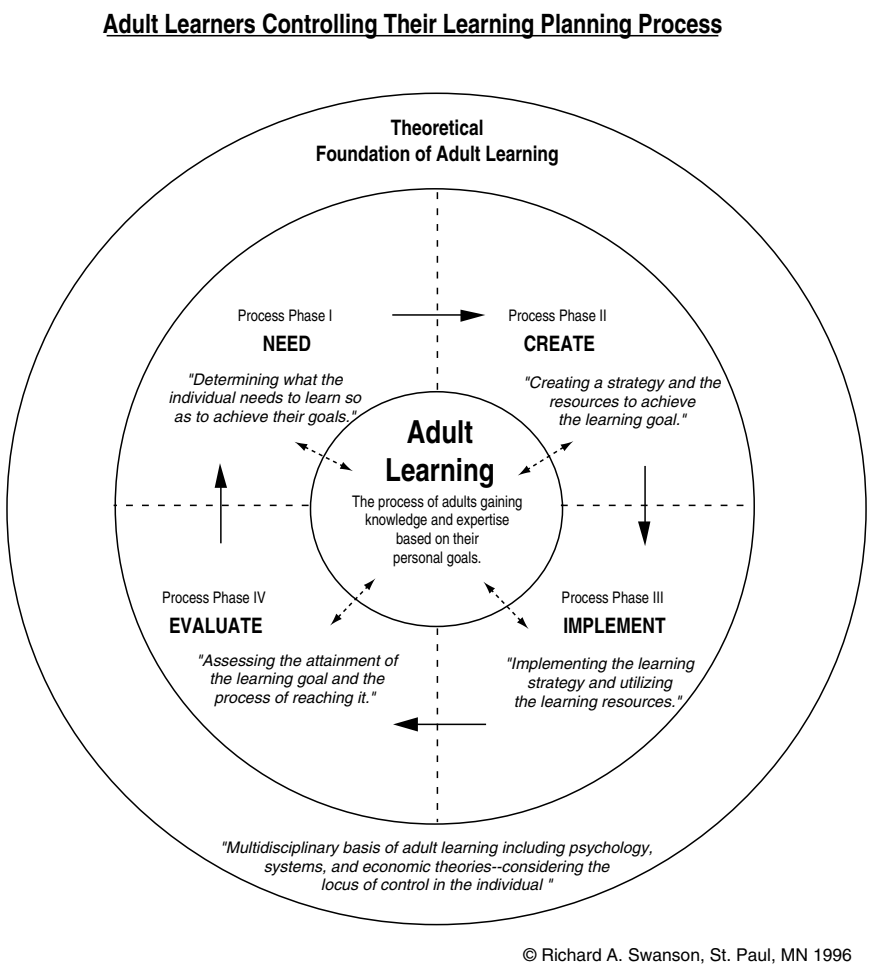

Figure 8-2. *Adult learners controlling their own learning process.*

• *Evaluate*. Assess the attainment of the learning goal and the process of reaching it.

These four phases serve as the categories or lenses used to search for what is known about learners controlling their own learning process.

Adults Determine Their Own Learning Needs

"Who needs what, as defined by whom?" is a wonderful way to sum up the issues of needs assessment in relation to the issue of

control. At the *need* phase, adults who exhibit control will fully determine the learning needs required to achieve their personal goal(s). The idea of control at the need determination phase can better be examined through the perspective of four types of learning:

Type of Learning	Locus of Control
Unintended learning	No control
Self-directed learning	Learner controlled
Mediated learning	Shared control between learner and external authority
Authority-directed learning	Authority controlled (organization or individual)

Even though there are limitations to learner control, Pentland (1997) found that the top four reasons why adults chose to learn on their own were all related to wanting to retain control of the learning process. In this vein, the determination of learning *needs*, the upfront commitment to learning, is the phase with the greatest amount of attention in the literature.

The determination of the learning needs perspective in the AE literature is primarily reactive in nature rather than strategic or even tactical. Learning professionals are portrayed as reacting to the needs expressed by adult learners. The control resides with the learner, and the learning professional responds to those felt needs. This assumes that the learner (1) is fully aware of his or her needs, (2) can accurately assess the specific learning required, (3) is motivated enough to engage in any learning required, and (4) is motivated enough to engage in any learning needed, even if threatening. Brookfield (1986) reacts to this notion:

> To take learners' definitions of need as always determining appropriate practice is to cast the facilitator as a technician within the consumer mode. It is to remove from the facilitator all professional judgment and to turn him or her into a "knee-jerk" satisfier of consumer needs. Education becomes one giant department store in which facilitators are providers of whatever learners (consumers) believe will make them happy. (p. 97)

The extension of this idea into HRD is to conduct a learning/training *wants* analysis among employees and to call it a training *needs*

analysis. Employees are surveyed as to what training they would like to have and then the training options gaining the most votes are used as a basis for the course offerings. Recent developments in conducting these low-level surveys through computers and electronic data-gathering systems have provided an air of sophistication to this incomplete and/or incompetent practice. Surveys of this nature can be one important element in a sound needs analysis process, but not the process itself.

The fundamental flaw with this approach is that there is no substantial attention given to individuals, work process, or the organization. It does nothing well. This popular vote strategy requires almost no professional expertise on the part of those running the process and allows them to hide behind the cloak of democracy. On the positive side, the fundamental strength of this approach is that is provides the opportunity to participate, even if at a minimum level. Given such opportunity, objections are minimized and motivation is increased even when unpopular alternatives are put forward.

The reality is that this approach is not effective for improving performance (Swanson, 1996). Employee *wants* are only sometimes related to real performance improvement *needs*. Frequently, this is not due to employee ignorance, but simply the fact that they do not have the expertise, information, or time to properly analyze their needs. Their wants are their best guess, but are not accurate. Performance improvement often requires joint planning and, occasionally, an external analyst. Although this may create some tension initially as control is shifted to the organization, adults frequently become quite comfortable with it when they realize that giving up some control will ultimately enable them to do their jobs better and thus gain another form of control.

Adults Create and Implement Their Own Learning

The second phase of the adult learning planning process is *creating* a strategy and the resources to achieve the learning goal. The third phase is *implementing* the learning strategy and using the learning resources.

Rosenblum and Darkenwald (1983) concluded from their experimental research that high motivation could lead to high satisfaction and achievement *without* participant planning involvement. If this

was the case, one interpretation could be that involvement at the *need* phase is critical for the purpose of motivation and that similar learner involvement in the other phases is not as important. This could also be the reason why there is so little planning literature related to the *create* and *implement* phases other than in-process instructional techniques for engaging the learner. Without the issue of control, it is easy to see that these techniques at the *create* and *implement* phases use the core assumptions of andragogy while avoiding the fundamental question of control.

The relevant AE literature focused on learner control of the creation and implementation planning phase is scant. Most inferences must be made from related studies and from the *mediated learning*—the shared control between the learner and an external authority (usually the instructor).

For example, the effect of adult learners' self-concepts and their opinions about the content at the time they are directly engaged in the learning process has been studied. The classic Spelman and Levy (1966) study related to adults' self-concept of powerlessness and the distorting impact it had on their learning. In this study, heavy smokers learned as much general medical knowledge as nonsmokers, but learned significantly less about the relation to lung cancer than the nonsmokers. Smokers, feeling relatively powerless in context of their smoking addiction and its consequences, ended up learning less about lung cancer. The "liberating knowledge" was ineffectual.

In a more hopeful vein, part of Tolman's (1959) theory of purposive behaviorism explains *expectancies* in context of experience. Tolman suggests that adults learn where the goal is and how to get to it. Thus, it is reasonable to think that there is a melding of purposes between the organization and the individual contributor and that the means (creation and implementation) of achieving those purposes becomes relatively easy.

It could be that self-directed learning decisions at the *create* and *implement* phases result in high motivation, minimum growth, and high satisfaction. Thus, a countertheory to self-directed learning is that pursuing the opinions of adults to create and implement learning leads to low-risk decisions—comfort rather than growth. The control dilemma concerns HRD professionals as they struggle to meet organizational goals, determine the content and method of programs, and seek to fully engage learners.

Brookfield (1988) sheds light on this dilemma: "For a facilitator to completely ignore learners' needs and expressions of preference is arrogant and unrealistic. But it is just as misguided for a facilitator to completely repress his or her own ideas concerning worthwhile curricula or effective methods and to allow learners complete control over these" (p. 97). When it comes to the *create* and *implement* phases of planning learning theory and practice, the shared control between the external authority or instructor and the learner is the primary focus rather than learner self-direction. Within this model, professional educators engage learners and potential learners in the *create* phase so as to establish motivation and community and to promote validity of the experience and materials. At the *implementation* phase, shared control can take a variety of forms, including formative evaluation, team learning, and peer instruction.

Adults Evaluate Their Own Learning

The fourth phase of the adult learning planning process is *evaluation*, which is defined as "a systematic collection of evidence to determine if desired changes are taking place" (Swanson, 1996, p. 26). Before discussing adult learners controlling the *evaluation* of their own learning, it is critical to separate learning that they have controlled up to this phase from learning that has been controlled by others up to this point.

Assuming the learner has retained and executed control to this stage, the learner should be asking the evaluation question, "What systematic collection of evidence needs to be carried out to determine whether my desired changes took place?" The follow-up question is, "Based on the evidence collected, to what degree did the desired changes take place?" The questions are focused on learning outcomes or summative evaluation, not the process of working toward the learning outcomes or formative evaluation.

The learning evaluation literature is careful about noting direct measures of outcomes versus proxy, or related, measures. For example, a direct measure of a desired knowledge and/or expertise learning outcome would require instruments to directly measure the change. An indirect measure of knowledge might be to ask oneself or participants if they thought they learned a lot or whether they were satisfied with their learning. Indirect measures have highly questionable

validity. Research has shown that participant self-ratings of learning are not related to actual learning (Alliger and Janak, 1989; Alliger et al., 1997; Dixon, 1991). Although self-ratings are generally reliable (consistent), they are generally not trusted as being accurate (valid). Furthermore, participant ratings can be easily inflated by influential techniques by the instructor (Swanson and Fentress, 1976).

Thus, if adult learners rely on proxy measures—*self-assessment* of anticipated outcomes—they will most likely make false conclusions based on invalid data. Worse yet, if the learning professional, serving as a resource to the adult learning process, relies on leaner perceptions and feelings about desired changes having taken place (even more indirect measures), the problem is compounded. Examples of such highly questionable evaluation practices relying on secondary sources of perception data are reported in the literature (see Cervero and Wilson, 1994, pp. 60–61, 86-87, 111–113).

The adult learner, wanting to retain control over the evaluation process while gaining valid data, will, in most instances, have to reach outside his or her internal reference to gain rational evaluation data. Obtaining direct measures of learning—knowledge and expertise—from formal tests or expert judges would be the most likely alternative. In many avocational realms of personal development, interest groups provide external measures of skill through competitive judging (for example, car shows, stamp shows, dance competition, etc.). At a less threatening level, experts serving as mentors can provide similar evaluation.

The humanistic side of the evaluation literature has had a resistance to summative, outcome evaluation. The formative evaluation view is that evaluation should be diagnostic and have the purpose of improving learning, rather than simply determining if the desired changes took place. Formative evaluation is seen as feedback and feed-forward between the various phases of learning. Again, the purpose of formative evaluation is to be a part of the learning process, not to assess the drive toward organization performance and the demands for adult competence in the workplace. Furthermore, it is controlled by the organization, not the individual. Human resource development functions in an organizational world and demands results and the assessing of results. Management or work teams will likely be full partners in the *evaluation* phase of learning outcomes rather than the individual learners.

In summary, adult learning theory provides sound advice to HRD at each phase of the planning process:

Phase	Sound Practice
Need	Engage learners in this phase to gain higher motivation. Do not expect self-reported needs to be accurate for either the individual or the organization.
Create	Engage learners in this phase to gain higher validity in the selected learning strategies.
Implement	Engage learners in this phase to better mediate the actual learning.
Evaluate	Engage learners in this phase to gain higher self-reflection and integration of the knowledge and expertise being sought.

Conclusion

Exploring the gaps between research and practice is a primary role for the reflective practitioner in HRD (Swanson and Holton, 1997). The call to action is to implement best known practices *and* to conduct more research related to the methods to assess valid learning needs, create and implement valid strategies for achieving learning goals, and conduct valid assessment of learning. This effort should be directed at organization needs as well as those of individual performers.

The idea that the goal of HRD is or should be performance improvement is by no means universally accepted by practitioners or researchers in the field. Some hold that fostering learning or the capacity to learn is a valuable outcome in and of itself and assume that sponsoring organizations will logically benefit. Thus, the line is sometimes drawn between those who view HRD as tied to business goals and focused on performance and those who would like to take a more humanistic stance in the matter. This dichotomy can be termed the *performance-versus-learning debate* as a matter of convenience (see Swanson, 1995; Watkins and Marsick, 1995).

This debate, like many others, is fueled by an often misconstrued delineation of the opposing sides. Upon closer examination, the two sides may have more in common than first proposed. On the one

hand, those who adhere to the performance orientation of HRD do not do so in an attempt to deny the dignity and worth of employees. Neither do they deny that learning is a necessary component of performance. The goal of performance-focused HRD is simply to ensure that the HRD process within organizations contributes to the goals of the organizational system within which it operates. This does not necessarily imply an authoritarian management style. Some might argue that to *ignore* performance issues is itself inhumane and inconsiderate of the workforce. Although organizational performance does not guarantee job security, poor organizational performance puts jobs at serious risk. On the other hand, those on the learning side of the debate are not so naive as to think that organizational goals and performance are irrelevant to HRD. Quite to the contrary, they *are* seen as core, but that learning is not always directly tied to the bottom line of an organization.

From the HRD perspective, adult learning, when practiced within productive organizations, should strive to contribute directly to the advancement of the host organization's goals. The host organization is a purposeful system that must pursue effective and efficient survival goals. Consequently, it is the responsibility of HRD to focus on organizational goals as well as individual goals.

REFLECTION QUESTIONS

8.1 Discuss how both disciplines of adult education and human resource development connect to adult learning.

8.2 From your experience, how does learning connect with performance? Speak to performance at various levels (individual, work process, and organization).

8.3 What is your general position related to the idea of adult learners controlling their own learning?

8.4 Discuss the relative ease and difficulty of adults controlling the various learning phases (need, create, implement, and evaluate).

CHAPTER 9

New Perspectives on Andragogy

This chapter discusses new perspectives on andragogy that have emerged from research and theory in a variety of disciplines. The chapter is organized by the core andragogical principles and examines new thinking that refines and elaborates on each principle. These core principles are (1) the learner's need to know, (2) self-directed learning, (3) prior experiences of the learner, (4) readiness to learn, (5) orientation to learning and problem solving, and (6) motivation to learn.

The Learner's Need to Know

The core principle that adults "need to know" why before they engage in learning has led to the now generally accepted premise that adults should be engaged in a collaborative planning process for their learning. Indeed, one of the distinguishing characteristics of many adult learning programs is the shared control of program planning and facilitation. Even in learning situations in which the learning content is prescribed, sharing control over the learning strategies is believed to make learning more effective. Engaging adults as collaborative partners for learning satisfies their "need to know" as well as appeals to their self-concept as independent learners.

Because mutual planning is so widely accepted and generally found to be effective by most practitioners, few researchers have been motivated to test this assumption. Training researchers have conducted research related to this premise that suggests three dimensions to the

need to know: the need to know *how* learning will be conducted, *what* learning will occur, and *why* learning is important.

How learning is conducted. Tannenbaum, Mathieu, Salas, and Cannon-Bowers (1991) studied a group of new employees to examine the extent to which training fulfillment predicted posttraining attitudes. *Training fulfillment* was defined as the extent to which training met or fulfilled the group's expectations and desires. The study focused mostly on how the training was conducted and was somewhat consistent with adult learning principles. The study showed that training fulfillment was related to posttraining organizational commitment, academic self-efficacy, physical self-efficacy, and motivation to use the training. The positive results were strongest for commitment and motivation to use training. These findings clearly point to the importance of understanding trainees' expectations and desires through needs assessment and mutual planning.

What learning will occur. Hicks and Klimoski (1987) studied a group of managers attending training on performance appraisals. The group that received a more realistic preview of what topics would be covered and the expected outcomes and were given a choice about whether to attend the training were more likely to believe the workshop was appropriate for them. The group also believed they were better able to profit from the workshop, showed more commitment to their decision to attend the training, and were more satisfied with the learning. Students with a high degree of choice also were more motivated to learn and learned more.

Baldwin, Magjuka, and Loher (1991) directly tested the proposition that trainee involvement in planning about learning would enhance the learning process. Their findings reinforce the importance of choice about learning. Trainees who had a choice about attending training, and received their choice, had higher pretraining motivation and learning. The worst results were found for those who were offered a choice but did not get it.

Why learning is important. Clark, Dobbins, and Ladd (1993) explored a third dimension of a learner's need to know in their study of 15 training groups across 12 different organizations representing a wide variety of organizational types and training topics. Their findings showed that job and career utility were significant predictors of training motivation. Furthermore, when employees had the chance

to provide input into the training decision, they were more likely to perceive job and career utility.

Reber and Wallin's (1984) work took this a step further. They investigated the effect of trainees receiving knowledge of results from previous trainees' successful application of training. Trainees with knowledge of results achieved posttraining goals, while others did not.

Implications. These studies all focused on adult learning in one setting (organizational training), so some caution is appropriate in generalizing about *all* adult learning situations. Nonetheless, these are strong studies that directly support this andragogical assumption. The message to adult learning professionals is that the common prescription to involve adults in mutual planning and as learning partners is a sound one. However, the exact means by which this effect works cannot be determined from this research. That is, engaging adults in planning the learning process could enable people to decide not to participate in low-value learning, or could actually change their attitudes toward the learning. Regardless, the research seems to point to three areas in which adults need information and involvement before learning: the how, the what, and the why of learning.

Self-directed Learning

Perhaps no aspect of andragogy has received so much attention and debate as the premise that adults are self-directed learners. That adults can and do engage in self-directed learning (SDL) is now a foregone conclusion in adult learning research. Questions remain as to whether self-directed learning is a characteristic of adult learners, and whether it should be a goal of adult educators to help all adult learners become self-directed. Much of the confusion surrounding the self-directed learning assumption stems from conceptual confusion about the meaning of self-directed learning.

There are two conceptions of self-directed learning prevalent in the literature (Brookfield, 1986; Candy, 1991). First, self-directed learning is seen as self-teaching, whereby learners are capable of taking control of the mechanics and techniques of teaching themselves in a particular subject. For example, a person who completes an independent study course would clearly engage in self-teaching. Second, self-directed learning is conceived of as personal autonomy,

which Candy (1991) calls autodidaxy. Autonomy means taking control of the goals and purposes of learning and assuming ownership of learning. This leads to an internal change of consciousness in which the learner sees knowledge as contextual and freely questions what is learned.

These two dimensions of self-directed learning are relatively independent, although they may overlap. A person may have a high degree of personal autonomy but choose to learn in a highly teacher-directed instructional setting because of convenience, speed, or learning style. For example, a person may decide to learn more about personal financial planning, and, after weighing different strategies, decide that attending courses at a university is his or her preferred approach. In fact, many adults decide that traditional instruction is the best approach when they know little about a subject. Choosing traditional instruction over self-teaching does not mean a person has given up ownership or control just because he or she chooses to access learning in this manner. Conversely, just because an adult engages in self-teaching does not mean that the person is autonomous. Continuing the earlier example, the student in the independent study course may have little ownership if the supervising teacher sets all the requirements. Thus, the presence or absence of activities associated with self-teaching is not an accurate indicator of personal autonomy. For most learning professionals, the most important dimension of self-directed learning is building personal autonomy.

The assumption that all adults have full capacity for self-teaching and personal autonomy in every learning situation is generally not accepted. Any particular learner in a particular learning situation is likely to exhibit different capabilities and preferences. Grow (1991) suggested that self-directed learning is situational and that the "teacher's" job is to match styles with the student. Grow proposed four stages, and corresponding teaching styles, as presented in Table 9-1.

It is important to note that mismatches can occur in either direction. That is, too much self-directedness can be as big a problem as too little, depending on the learner. For example, a learner who is experienced with the subject matter and has strong learning skills will likely be frustrated in highly controlled learning situations. Conversely, a learner who is inexperienced with the subject and has

poorly developed self-directed learning skills will likely be intimidated, at least initially, in highly self-directed learning situations. Because learners in any given learning situation are likely to vary widely as to what stage they are in, the teacher has to structure the learning situation to accommodate all stages.

It is also important to note that the reason a learner is in a particular stage may be related to self-teaching skills, or personal autonomy, or both. Suppose a learner exhibits Stage One behaviors. That person could be highly autonomous but does not know how to learn particular material. Or, the person could have strong self-teaching skills but little autonomy. Or, the person could be highly autonomous and a good self-teacher but simply chooses not to learn individually.

Garrison (1997) more formally captured this multidimensional view of self-directed learning. He proposed a comprehensive model of self-directed learning based on three core components: (1) self-management (control); (2) motivation (entering and task): and (3) self-monitoring (responsibility). According to Garrison, AE has traditionally focused on the first component, the control of learning, and has paid less attention to the learning processes. He suggests that equal attention should be focused on motivation issues,

Table 9-1
Grow's Stages in Learning Autonomy

Stage	Student	Teacher	Examples
Stage 1	Dependent	Authority, coach	Coaching with immediate feed back, drill. Informational lecture. Overcoming deficiencies and resistance
Stage 2	Interested	Motivator, guide	Inspiring lecture plus guided discussion. Goal-setting and learning strategies
Stage 3	Involved	Facilitator	Discussion facilitated by teacher who participates as equal. Seminar. Group projects
Stage 4	Self-directed	Consultant, delegator	Internship, dissertation, individual work or self-directed study group

including the motivation to engage in self-directed learning and to complete self-directed learning tasks. Garrison's third component, self-monitoring, is the cognitive learning processes as well as metacognitive skills a person needs to engage in self-directed learning. Adult learning professionals need to pay attention to all three components.

A related stream of research comes from psychology and the concept referred to as locus of control (Rotter, 1966, 1990). *Locus of control* occurs when "people attribute the cause or control of events to themselves or to an external environment. Those who ascribe control of events to themselves are said to have internal locus of control and are referred to as *internals*. People who attribute control to outside forces are said to have an external locus of control and are termed *externals*" (Spector, 1982).

Internals perceive greater control and actually seek situations in which control is possible (Kabanoff and O'Brien, 1980). When it comes to successfully performing a task that requires luck or skill, *externals* are more likely to choose luck and *internals* choose skill (Kahle, 1980). There appears to be a relationship between locus of control and experience. Phares (1976) notes that *internals* exert greater control of their environment, exhibit better learning, seek new information more actively, and seem more concerned with information than with social demands of situations. Externals tend to be more nervous than internals (Archer, 1979). Thus, internals do not need as much help when it comes to learning, and externals, even after given help, tend not to take control.

"Locus of control is considered an important personality variable in organizational research and theory" (Spector, 1982, p. 493). As such, it is believed to be a stable trait, not easily changed. Thus, research suggests that freeing those who have not taken charge of their learning in the past to now take charge of their learning must be tempered by realities of the limits of the individual's personality. Some individuals will naturally prefer and seek more independence (internals), whereas others will prefer and may seek more direction (externals).

As a practical matter, the contingency model of self-directedness seems most appropriate for facilitators of adult learning because it more closely matches the reality of most learning situations. There are many factors that individuals weigh in choosing whether to

behave in a self-directed way at a particular point. These may include:

- Learning style
- Previous experience with the subject matter
- Social orientation
- Efficiency
- Previous learning socialization
- Locus of control

That an adult learner may choose not to be self-directed, for whatever reason, does not invalidate the core principle that adults, and adults in the United States in particular, have a self-concept of being independent. In fact, it is having the freedom to choose their learning strategy that is critical. It is the sense of personal autonomy, not self-teaching, that seems to be most important for adults. The biggest problems arise when adult learners want to have more independence in their learning but are denied that opportunity.

Some adult educators insist that the goal of all learning should be to increase personal autonomy in a learner. We agree that there are many learning situations in which this is true, but we must also be careful to avoid imposing a set of goals and purposes on each learning event. Although it can be argued that any learning has the effect of building autonomy in a person, there may be learning events in which there is not a core aim to build autonomy in a learner. For example, a CPR class taught by a hospital may help people be more self-sufficient but may not enhance self-directed learning ability. Grow's (1991) model does not necessarily presume a goal of building self-directedness.

Prior Experiences of the Learner

The role of the adult learner's experience has become an increasingly important area of focus, particularly in the professional development arena. Chapter 4 noted four means by which adults' experiences impact learning. These are:

1. Create a wider range of individual differences.
2. Provide a rich resource for learning.

3. Create biases that can inhibit or shape new learning.
4. Provide grounding for adults' self-identity.

Traditionally, adult learning professionals have focused on items 1, 2, and 4 by emphasizing experiential learning techniques. However, much of the recent emphasis has been on item 3, focusing on how an adult's experience serves to shape or inhibit new learning. Several lines of research are connected to this central premise that adults' experiences play a major role in shaping their learning. Although they are largely separate streams of research, and none is specifically anchored in the andragogical model, collectively they reinforce this core principle. The remainder of this section summarizes these different lines of research.

Chris Argyris (1982) and Donald Schon (1987) have written extensively about the difficulties and importance of overcoming the natural tendency to resist new learning that challenges existing mental schema from prior experience. Argyris labels learning as either "single-loop" or "double-loop" learning. *Single-loop learning* is learning that fits prior experiences and existing values, which enables the learner to respond in an automatic way. *Double-loop learning* is learning that does not fit the learner's prior experiences or schema. Generally it requires learners to change their mental schema in a fundamental way.

Similarly, Schon (1987) talks about "knowing-in-action" and "reflection-in-action." *Knowing-in-action* is the somewhat automatic responses based on a person's existing mental schema that enable him or her to perform efficiently in daily actions. *Reflection-in-action* is the process of reflecting while performing to discover when existing schema are no longer appropriate, and changing those schema when appropriate. The most effective practitioners, and learners, are those who are good at reflection-in-action and double-loop learning.

Three streams of closely related cognitive psychological research help explain how prior experience influences learning: schema theory, information processing, and memory research (Jonassen and Grabowski, 1993). *Schema* are the cognitive structures that are built as learning and experiences accumulate and are packaged in memory. Merriam and Cafarella (1991) point out that all people carry around a set of schemata that reflect their experiences and in turn

become a basis for assimilating new information. Rummelhart and Norman (1978) proposed three different modes of learning in relation to schema: *accretion*, *tuning*, and *restructuring*. Accretion is typically equated with learning of facts and involves little change in schema. Tuning involves a slow and incremental change to a person's schemata. Restructuring involves the creation of new schema and is the hardest learning for most adults.

Schema theory is closely related to mental models. Senge (1990), building on schema theory and Argyris's work, identifies "mental models" as one of the five core characteristics of the learning organization. The learning organization, a relatively new strategy that many organizations embrace, is defined by Marquardt (1996) as "organization that learns powerfully and collectively and is continually transforming itself to better collect, manage, and use knowledge for corporate success" (p. 19). It is a complex strategy that positions learning as a core asset of the organization to cope with the rapid pace of change in a global economy.

Senge (1990) defines *mental models* as "deeply held internal images of how the world works, images that limit us to familiar ways of thinking and acting" (p. 174). In other words, mental models are the cognitive structures that arise from an individual's experiences. They enable employees to function efficiently on a day-to-day basis. However, they also impede change because many people resist changes that do not fit their mental model, particularly if change involves restructuring long or deeply held schema. To become more effective learners, adults have to identify their mental models, test them, and then learn how to change them. In Argyris's terms, they have to become better double-loop learners, which Schon would label as *reflection in action*. The result can be powerful improvement in individual and organizational learning, and perhaps performance, if employees understand that their mental models are assumptions, not facts, that filter their view of the world and events.

Information processing theory suggests that prior knowledge acts as a filter to learning through attentional processes. That is, learners are likely to pay more attention to learning that fits with prior knowledge schema and, conversely, less attention to learning that does not fit.

The predominant model of human memory divides memory into three components: sensory, short-term and long-term (Huber, 1993).

Experience affects sensory memory through the process of attention and selecting what information to process. Selection depends in part on what information is already stored in long-term memory from prior learning and experience.

For long-term memory, prior experience has a major effect on how information is retained and stored. Ormrod (1990) offers the following principles of long-term memory storage:

1. Some pieces of information are selected and others are excluded.
2. Underlying meanings are more likely to be stored than verbatim input.
3. Existing knowledge about the world is used to understand new information.
4. Some existing knowledge may be added to the new information, so what is learned may be more than, or different from, the information actually learned.

These cognitive processes explain in part the emergence of constructivism as a new perspective on learning (Duffy and Jonassen, 1992). Although controversial, especially in its more radical versions, constructivism is emerging as a useful perspective for some adult learning situations (Wiswell and Ward, 1997). Constructivism stresses that all knowledge is context bound, and that individuals make personal meaning of their learning experiences. Thus, learning cannot be separated from the context in which it is used. Constructivists also stress the cumulative nature of learning. That means that new information must be related to other existing information in order for learners to retain and use it. For adults, experience might be conceptualized as a giant funnel of previous knowledge, and new information that enters the top of the funnel cascades downward and eventually falls out unless it "sticks" to some element of prior knowledge.

Constructivists advocate a different approach to learning. Savery and Duffy (1996) suggest eight constructivist instructional principles:

1. Anchor all learning activities to a larger task or problem.
2. Support the learner in developing ownership for the overall problem or task.

3. Design an authentic task.
4. Design the task and the learning environment to reflect the complexity of the environment in which learners should be able to function at the end of learning.
5. Give the learner ownership of the process used to develop a situation.
6. Design the learning environment to support and challenge the learner's thinking.
7. Encourage testing ideas against alternative views and alternative contexts.
8. Provide opportunity for and support reflection on both the content learned and the learning process.

The parallels between moderate views of constructivism and andragogy are rather striking. Both stress ownership of the learning process by learners, experiential learning, and problem-solving approaches to learning. However, andragogy and the more extreme views of constructivism are not compatible.

Traditional instructional design theory is also evolving to emphasize the importance of mental models (Merrill, 1992). Although at sharp odds with many aspects of constructivism, this is one area of clear agreement. Tessmer and Richey (1997) point out that there has been a rediscovery of contextual analysis in instructional design. Although it has always been a part of instructional systems design models, it has been neglected over the years. Traditional front-end environmental analysis emphasized the importance of analyzing elements in the external environment that might affect learning but largely ignored learner characteristics. *Systemic training design* extends environmental analysis to include learner characteristics such as attitudes and accumulated knowledge from prior experiences (Richey, 1995). One of the core directions for change in instructional design is a commitment to the belief that mental structures do exist and shape the way people learn (Kember and Murphy, 1995). Tessmer and Richey (1997) propose a general model of contextual factors that influence learning, one level of which is the *orienting context*. The orienting context consists of all the pre-learning factors that affect the learning event. The elements of a person's background and experiences are among the critical factors they say shape learning.

In summary, there is growing recognition from multiple disciplines that adults' experiences have a very important impact on the learning process. Adult learning leaders have long capitalized on adult learners' experiences as a resource for learning, but they have not adequately recognized its role as a gatekeeper for learning. On the one hand, experience can aid in learning new knowledge if the new knowledge is presented in such a way that it can be related to existing knowledge and mental models. On the other hand, those same mental models can become giant barriers to new learning when the new learning challenges them.

Thus, the unlearning process becomes as important as the learning process when new learning significantly challenges existing schema. Kurt Lewin (1951) recognized this when he talked about the first stage of change being the "unfreezing" stage (the other two being change and refreezing). From this perspective, individuals cannot be expected to change unless attention is first paid to unfreezing them from their existing beliefs and perspectives. Said differently, people will not engage in double-loop learning until they are unfrozen from existing mental models. Kolb (1984) points out that learning is a continuous process grounded in experience, which means that all learning can be seen as relearning. This is particularly true for adults who have such a large reservoir of experiences.

READINESS TO LEARN

Adults generally become ready to learn when their life situation creates a need to know. It then follows that the more adult learning professionals can anticipate and understand adults' life situations and readiness for learning, the more effective they can be. The challenge has been to develop models to explain typical variability in adult readiness to learn.

Pratt (1988) proposed a useful model of how adults' life situations not only affect their readiness to learn but also their readiness for andragogical-type learning experiences. He recognizes that most learning experiences are highly situational, and that a learner may exhibit very different behaviors in different learning situations. For example, it is entirely likely that a learner may be highly confident and self-directed in one realm of learning but very dependent and unsure in another.

Pratt illustrated this by identifying two core dimensions within which adults vary in each learning situation: *direction* and *support*. Pratt's model recognizes that learners may have fundamentally different needs for assistance from an adult learning professional. Some may need direction in the mechanics or logistics of learning, whereas others need emotional support. Learning professionals who notice learners who do not seem ready for learning in an andragogical manner must understand within which dimension the need exists.

Direction refers to the learner's need for assistance from other persons in the learning process and is a function of an adult's competence in the subject matter and general need for dependence. Adults who have high *competence* in the subject matter and low general need for *dependence* will be much more independent as learners than those who have little competence and prefer dependency. Even adults who have low general dependence may need direction in the early stages of learning new subject matter in which they have little competence.

Support refers to the affective encouragement the learner needs from others. It is also the product of two factors: the learner's *commitment* to the learning process and the learner's *confidence* about his or her learning ability. Thus, learners who are very highly committed and confident will need less support. Conversely, those who have low commitment and low confidence will need more support.

Pratt proposes a four-quadrant model (see Figure 9-1) to reflect combinations of high and low direction or support. Learners in quadrants 1 and 2 need a more highly teacher-directed approach to learning, whereas those in quadrants 3 and 4 are more capable of self-direction. It is important to note, however, that learners in quadrant 3 still need a high level of involvement with another person in the learning process, but for support, not direction.

Pratt's model, though untested, provides a conceptual explanation for some of the variability that adult learning facilitators encounter in any group of adult learners. Assemble a group of adults for learning and you will likely find some that need a great deal of direction and emotional support (quadrant 1), some that need direction but not much support (quadrant 2), some who may act like they need direction by being in the group but who are really there to get support (quadrant 3), and finally, some who like a true andragogical approach (quadrant 4). To further complicate the picture, those

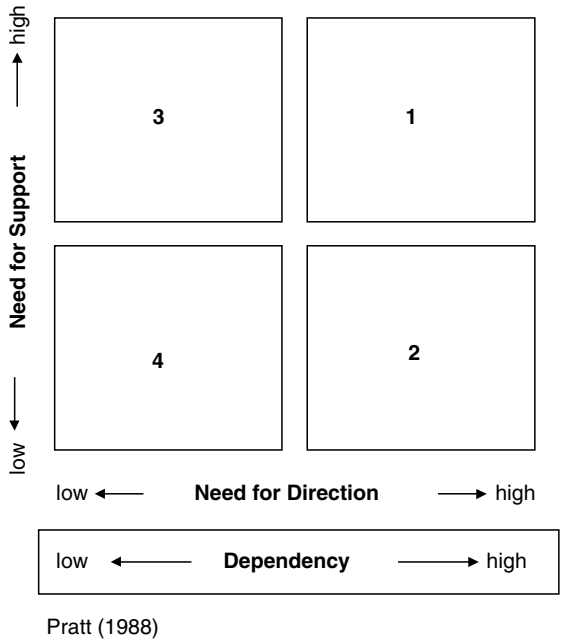

Figure 9-1. *Pratt's model of high and low direction and support.*

same people may switch quadrants when learning different subject matter. By recognizing situational influences on adult learning behavior, Pratt helps explain why the core assumptions are not always a perfect fit, at least initially in learning situations. It seems reasonable to expect that learners in quadrants 1, 2, and 3 may move toward quadrant 4 as their competence and confidence grows. The challenges for adult learning leaders are to (1) recognize where individual learners are at the beginning of a learning experience and (2) be attentive to changes in needs for direction and support during the learning experience.

ORIENTATION TO LEARNING AND PROBLEM SOLVING

Closely related to the role of prior experience in shaping learning is the role of current experiences in shaping the need to learn. We said earlier that adults generally prefer a problem-solving orientation to learning, rather than subject-centered learning. Furthermore, they

learn best when new information is presented in real-life context. As a result, the experiential approach to learning has become firmly rooted in adult learning practice.

David Kolb (1984) has been a leader in advancing the practice of experiential learning. He defines *learning* as "the process whereby knowledge is created through transformation of experience" (p. 38). For Kolb, learning is not so much the acquisition or transmission of content as the interaction between content and experience, whereby each transforms the other. The educator's job, he says, is not only to transmit or implant new ideas but also to modify old ones that may get in the way of new ones.

Kolb bases his model of experiential learning on Lewin's problem-solving model of action research, which is widely used in organization development (Cummings and Worley, 1997). He argues that it is very similar to Dewey's and Piaget's models as well. Kolb (1984) suggests that there are four steps in the experiential learning cycle (see Figure 9-2).

1. *Concrete experience*. Full involvement in new here-and-now experiences.
2. *Observations and reflection*. Reflection on and observation of the learner's experiences from many perspectives.
3. *Formation of abstract concepts and generalization*. Creation of concepts that integrate the learners' observations into logically sound theories.
4. *Testing implications of new concepts in new situations*. Using these theories to make decisions and solve problems.

Kolb goes on to suggest that these four modes combine to create four distinct learning styles (see Chapter 10 for more information on learning styles).

Kolb's (1984) model has made a major contribution to the experiential learning literature by (1) providing a theoretical basis for experiential learning research and (2) providing a practical model for experiential learning practice. The four steps in his model are an invaluable framework for designing learning experiences for adults. At a macro-level, programs and classes can be structured to include all four components, and at the micro-level these components can be

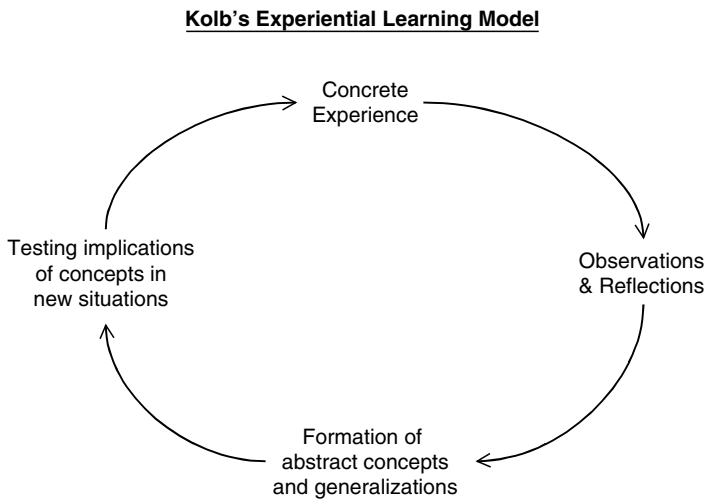

Figure 9-2. *Kolb's experiential learning model.*

included as units or lessons. Table 9-2 provides examples of learning strategies that may be useful in each step.

Research on Kolb's model has focused mostly on the learning styles he proposed. Unfortunately, research has done little to validate his theory, due in large part to methodological concerns about his instrument (Cornwell and Manfredo, 1994; Freedman and Stumpf, 1980; Kolb, 1981; Stumpf and Freedman, 1981).

Human resource development practitioners, while always valuing experience, increasingly emphasize experiential learning as a means

Table 9-2
Kolb's Model with Suggested Learning Strategies

Kolb's Stage	Example Learning/Teaching Strategy
Concrete Experience	Simulation, Case Study, Field trip, Real Experience, Demonstrations
Observe and Reflect	Discussion, Small Groups, Buzz Groups, Designated Observers
Abstract Conceptualization	Sharing Content
Active Experimentation	Laboratory Experiences, On-the-Job Experience, Internships, Practice Sessions

to improve performance (Swanson, 1996). Action reflection learning is one technique developed to focus on learners' experiences and integrate experience into the learning process (*ARL Inquiry*, 1996). Transfer-of-learning researchers also focus on experiential learning as a means to enhance transfer of learning into performance (Holton et al., 1997; Bates, Holton, and Seyler, 1997) and to increase motivation to learn (Seyler, Holton, and Bates, 1997). Structured on-the-job training (Jacobs and Jones, 1995) has emerged as a core method to more systematically capitalize on the value of experiential learning in organizations and as a tool to more effectively develop new employees through the use of experienced co-workers (Holton, 1996). Experiential learning approaches have the dual benefit of appealing to the adult learner's experience base as well as increasing the likelihood of performance change after training. It seems that many domains of adult learning would benefit in the same manner.

Motivation to Learn

The andragogical model of adult learning makes some fundamentally different assumptions about what motivates adults to learn. Adults tend to be more motivated toward learning that helps them solve problems in their lives or results in internal payoffs. This does not mean that external payoffs (for example, salary increase) have no relevance, but rather that the internal need satisfaction is the more potent motivator.

Wlodowski (1985) provides a partial explanation for this difference. He suggests that adult motivation to learn is the sum of four factors:

1. *Success*. Adults want to be successful learners.
2. *Volition*. Adults want to feel a sense of choice in their learning.
3. *Value*. Adults want to learn something they value.
4. *Enjoyment*. Adults want to experience the learning as pleasurable.

The first principle of andragogy states that "adults need to know why they need to learn something before undertaking to learn it."

Knowing why they need to learn something is the key to giving adults a sense of volition about their learning. Principle 6 states that the most potent motivators for adults are internal ones—for example, quality of life, satisfaction, and self-esteem. Said differently, the learning that adults value the most will be that which has personal value to them.

This position is also quite consistent with expectancy theory (Vroom, 1995), a classic theory of adult motivation in the workplace. Expectancy theory posits that an individual's motivation is the sum of three factors:

1. *Valence*. The value a person places on the outcome.
2. *Instrumentality*. The probability that the valued outcomes will be received given that certain outcomes have occurred.
3. *Expectancy*. The belief a person has that certain effort will lead to outcomes that get rewarded.

Table 9-3

Characteristics and Skills of Motivating Instructors (Wlodowski, 1985)

1. Expertise: The power of knowledge and preparation
   - Knows something beneficial to adults
   - Knows it well
   - Is prepared to convey it through an instructional process
2. Empathy: The power of understanding and consideration
   - Has a realistic understanding of learner's needs and expectations
   - Has adapted instruction to the learner's level of experience and skill development
   - Continuously considers learners' perspectives
3. Enthusiasm: The power of commitment and animation
   - Cares about and values what is being taught
   - Expresses commitment with appropriate degrees of emotion, animation, and energy
4. Clarity: The power of language and organization
   - Can be understood and followed by most learners
   - Provide for learners a way to comprehend what has been taught if it is not clear in the initial presentation

Put into learning terms, adult learners will be most motivated when they believe that they can learn the new material (expectancy) and that the learning will help them with a problem or issue (instrumentality) that is important in their life (valence).

Wlodowski (1985) suggests a model of characteristics and skills for instructors who are good motivators of adults. They are grouped into four categories: *expertise*, *empathy*, *enthusiasm*, and *clarity* (see Table 9-3). Adult learning facilitators who develop these characteristics are likely to be highly motivating.

SUMMARY

That adults have a need to know prior to learning is now axiomatic for learning professionals. Research in organizational training suggests there are three aspects to the need to know: the need to know how the learning will be conducted, what will be learned, and why it will be valuable. Research indicates that the need to know affects motivation to learn, learning outcomes, and post-training motivation to use learning.

The concept of self-directedness has perhaps been the most debated aspect of andragogy. There are two prevalent and relatively independent dimensions of self-direction: self-teaching and personal autonomy. The assumption that all adults have full capacity or both dimensions in every possible learning situation is generally not accepted. Grow (1991), addressing this issue, postulates four stages and corresponding teaching styles: Stage 1: dependent student /authority, coach /teacher; Stage 2: interested student /motivator, guide /teacher; Stage 3: involved student /facilitator teacher; and, Stage 4: self-directed student /consultant, delegator teacher.

The role of the adult learner's experience has become an increasingly important focus area as well. Much of the recent emphasis has revolved around the notion that experience creates biases that can greatly impact new learning. Prominent researchers in this area include Argyris, Schon, and Senge. Labeling learning as either single- or double-loop learning, Argyris writes about the difficulties and importance of overcoming the natural tendency to resist new learning that challenges existing mental schema resulting from prior experience. Schon concentrates on knowing-in-action and reflection-in-action, concluding that the most effective practitioners and

learners are those who are successful at knowing-in-action and double-loop learning. And Senge identifies mental models as one of the five core characteristics of learning organization. Other researchers, particularly cognitive psychologists, have conducted extensive research in this field, resulting in a generally held belief that adults' prior experiences can both help and hinder the learning process and outcome.

The level of readiness of an adult is closely associated to the need to know. Recognizing that most learning experiences are situational and that the behavior of the learner varies with the learning situation, Pratt proposes a model of how life situations affect both readiness to learn and readiness for andragogical-style learning experiences. He identifies direction and support as core dimensions of variance and proposes a four-quadrant model reflecting combinations of direction and /or support.

Closely related to the role of prior experience in shaping learning is the role of current experiences in shaping the orientation to learning. Adults seem to learn best when new information is present in real-life context. As a result, the experiential approach to learning, most effectively advanced by Kolb, has become firmly rooted in adult learning practice. His four-stage model provides a theoretical basis and a practical model for experiential learning.

It is evident that adults are more motivated toward learning that helps them solve problems or results in internal payoffs. Wlodowski, in a theory closely related to Vroom's expectancy theory, explains the difference between adult and non-adult learners with four factors: success, volition, value, and enjoyment. Vroom uses three factors—valence, instrumentality, and expectancy—in his explanation.

Over the years, a variety of refinements to the core adult learning principles of the andragogical model have emerged. Some might view the refinements as weakening the model, but our view is that they strengthen it. Learning is a complex phenomenon that defies description by any one model. The challenge has been, and continues to be, to define what is most characteristic of adult learners, to establish core principles, and to define how to adapt those core principles to varying circumstances. The more researchers identify factors that moderate and mediate adult learning, the stronger the core principles become.

Reflection Questions

9.1 Report on a personal experience confirming the principal, "Learners need to know."

9.2 Report on a personal experience confirming the principal, "Self-directed learning."

9.3 Report on a personal experience confirming the principal, "Prior experience of the learner."

9.4 Report on a personal experience confirming the principal, "Readiness to learn."

9.5 Report on a personal experience confirming the principal, "Orientation to learning problem solving."

9.6 Report on a personal experience confirming the principal, "Motivation to learn."

CHAPTER 10

Beyond Andragogy

One aspect of the andragogical model that disturbs many people is that not all adults seem to fit the assumptions. Any facilitator of adult learning will tell you that adult learners are not as homogenous as the andragogical model implies. Research has shown that there are many individual differences among learners that interact with the core adult learning principles to shape adults' learning behaviors. As noted earlier, the andragogical principles are powerful but incomplete descriptors of adults' learning behavior. Experienced adult learning professionals have learned that, like most models, the andragogical learning principles are tempered by an array of other factors that affect learning behavior. Knowles (1984b) reinforced this when examining lessons learned from andragogy in practice: "The andragogical model is a system of elements that can be adopted or adapted in whole or in part. It is not an ideology that must be applied totally and without modification. In fact, an essential feature of andragogy is flexibility" (p. 418).

This chapter introduces more new perspectives on adult learning that help explain and refine the core learning principles of andragogy. Included are introductions to the individual difference perspective of psychology, new thinking about learning how to learn, and developmental perspectives. These new understandings are important for developing effective andragogical adult learning in practice.

Individual Differences in Adult Learners

The major premise of research on individual difference is that instructors should adapt instruction to accommodate differences in

individual abilities, styles, and preferences (Jonassen and Grabowski, 1993). By doing so, it is expected that learning outcomes will improve. Instructors are encouraged either to capitalize on learner strengths or to help learners develop a broader range of capabilities.

Researchers call this an *aptitude-by-treatment interaction,* which simply means that the treatment (instruction in this case) interacts with individual "aptitudes" (including abilities, styles, and traits) in producing learning outcomes. Unfortunately, research has not provided consistent support for aptitude-treatment interactions, although it has shown many instances in which the interactions do occur (Jonassen and Grabowski, 1993; Snow, 1989). Methodological issues have limited researchers from generalizing about this premise. At the same time, most practitioners find high face validity in the notion that different learners require different instructional strategies based on their individual differences. It is the anecdotal evidence, case studies, and promising research studies that keep the individual differences hypotheses alive. The safe conclusion at this point is that individual differences do indeed affect learning, but researchers simply do not have the tools and methodologies to adequately measure or study them. In addition, learning may be so highly context specific, and the interactions so complex, that consistent relationships will never emerge, at least not with the degree of generalization we might desire.

Jonassen and Grabowski (1993) present a typology of individual differences that impact learning (see Table 10-1). Table 10-1 incorporates three broad categories of individual differences: *cognitive*, *personality*, and *prior knowledge*. There is no generally agreed upon schema for categorizing individual differences, but this one is quite useful for adult learning purposes. Prior knowledge was considered in Chapter 7 in our discussion of experience. This section will be devoted primarily to the cognitive group of differences because they seem to have a large impact on adult learners.

Jonassen and Grabowski (1993) conceptually divide cognitive differences into four levels:

1. *Cognitive abilities*. Psychometric models of intelligence, including primary and secondary abilities (categories 1 and 2 in Table 10-1).

Table 10-1
Individual Learner Differences

COGNITIVE

1. General Mental Abilities
   - Hierarchical abilities (fluid, crystallized, and spatial)
2. Primary Mental Abilities
   - Products
   - Operations
   - Content
3. Cognitive Controls
   - Field dependence/independence
   - Field articulation
   - Cognitive tempo
   - Focal attention
   - Category width
   - Cognitive complexity/simplicity
   - Strong vs. weak automatization
4. Cognitive Styles: Information Gathering
   - Visual/hepatic
   - Visualizer/verbalizer
   - Leveling/sharpening
5. Cognitive Styles: Information Organizing
   - Serialist/holist
   - Conceptual style
6. Learning Styles
   - Hill's cognitive style mapping
   - Kolb's learning styles
   - Dunn and Dunn learning styles
   - Grasha-Reichman learning styles
   - Gregorc learning styles

PERSONALITY

7. Personality: Attentional and Engagement Styles
   - Anxiety
   - Tolerance for unrealistic expectations
   - Ambiguity tolerance
   - Frustration tolerance

8. Personality: Expectancy and Incentive Styles
   - Locus of control
   - Introversion/extroversion
   - Achievement motivation
   - Risk taking vs. cautiousness

PRIOR KNOWLEDGE

9. Prior Knowledge
   - Prior knowledge and achievement
   - Structural knowledge

Based on data from Jonassen and Grabowski, 1993.

2. *Cognitive controls*. Patterns of thinking that control the ways individuals process and reason about information. These are the psychometric entities that regulate perception, and are direct descendants from cognitive abilities (category 3 in Table 10-1).
3. *Cognitive styles*. As defined by Messick (1984), they are "characteristic self-consistencies in information processing that develop in congenial ways around underlying personality trends." They reflect ways in which learners process information to make sense out of their world (categories 4 and 5 in Table 10-1).
4. *Learning styles*. General tendencies to *prefer* to process information in different ways. They are less specific than cognitive styles, and are usually assessed by self-reported preferences (category 6 in Table 10-1).

Level 4, learning styles, is the most visible level and can be thought of as the "outer level," whereas cognitive abilities is the "inner level" and may be the least visible. Cognitive abilities influence cognitive controls, which influence cognitive styles, which in turn influence learning styles. As Table 10-1 shows, the list of characteristics that could be considered in each category is extensive. We will consider only selected ones that show promise for enhancing the core learning principles.

Cognitive Abilities: New Thinking about Intelligence

Intelligence has traditionally been referred to in a unidimensional manner rooted in the psychological conception of intelligence as academic IQ. At one time, cross-sectional studies led to the conclusion that intelligence declined in the adult years. This was inconsistent with the general observation that adults did not seem to become "less smart" and, in fact, usually became quite a bit more successful and competent as they aged. This led researchers to question IQ as a universal measure of intelligence and to search for conceptions of intelligence that would help explain outcomes of adult life and adult learning. This section reviews thinking about alternate forms of intelligence, most of which tends to support the andragogical notions of adult learning.

One of the earlier attempts to explicate multiple intelligences was Horn and Cattell's theory of *fluid* and *crystallized* intelligence (Cattell, 1963; Horn and Cattell, 1966). Fluid intelligence is similar to the traditional notions of IQ, and refers to the ability to solve novel problems. It was believed to peak in teen years and remain stable in adult years, largely because it is most closely linked to physiological factors such as memory. Crystallized intelligence, on the other hand, is a function of experience and education, and increases in adult years. The presumption was that any loss in fluid abilities was compensated for by crystallized intelligence in stable environments. In fact, adults do show some loss of fluid abilities, particularly on speeded tasks; however, they become better at using the knowledge they have.

The research on the relationship between aging and adult intelligence is somewhat controversial. The pioneering work of Schaie (1994) and the Seattle Longitudinal Study, suggests that earlier conclusions about decline in IQ may not be correct. In this study, Schaie and his colleagues followed a set of subjects since 1956 and used the Primary Mental Abilities Test to assess IQ. When the data on IQ is analyzed cross-sectionally, a decline in IQ with age is shown. When analyzed longitudinally, no decline is indicated. In fact, IQ shows a slight rise during middle age, and only declines below the 25-year-old level after reaching age 67. The conclusion from these studies is that there is no decline in fluid or crystallized intelligence until late in life.

Kaufman (1990) disputes these findings based on his analysis of data from the Wechsler Adult Intelligence Scale (WAIS and WAIS-R). He argues that the WAIS-R is the most valid assessment instrument for adult intelligence, particularly in clinical settings. Longitudinal analyses from WAIS-R data support Horn and Cattell's (1966) theory that fluid abilities decline substantially throughout life, starting as early as the late 20s, but that crystallized intelligence remains relatively stable until old age.

There are complex research methodolgy issues underlying these studies that are beyond the scope of this book but that also affect conclusions about adult intelligence. These two lines of research not only use different instruments but different research methods as well. The conclusions at this point are that (1) crystallized intelligence does *not* decline until old age but (2) fluid intelligence may. The implication of this research is that adult learning professionals must be alert to the possibility that adult learners, particularly older ones, may not respond as quickly to totally new material or situations. Adjustments may need to be made to allow additional time for learning. On the other hand, when learning depends on prior experience and education, no adjustments should be needed.

Others have also proposed models of multiple intelligences, but they have not been fully researched. Guilford (1967) also observed that IQ tests were inadequate for assessing adult intelligence and this led him to propose a three-factor structure of intellect. He suggested three types of mental abilities:

1. *Intellectuall abilities*. Classified according to operation (cognition, memory, production, and evaluation)
2. *Intellect*. Classified according to content (verbal, numeric, behavioral)
3. *Intelligence*. Classified according to product (simple to complex)

Because the product is the result of the interaction between mental abilities and learning content, adults might develop better mental abilities in compensating for any loss of learning content.

Another perspective was offered by Gardner's (1983) theory of multiple intelligences. He suggests there are seven types of

intelligence: academic, linguistic, logical-mathematical, spatial, musical, bodily kinesthetic, understanding oneself, and understanding others. He suggests that a person might exhibit high intelligence in one or more of these, and low intelligence in others. Critics classify Gardner's multiple intelligences as *talents*, not intelligence.

Sternberg (1988) regards most theories of intelligence as incomplete. He argues for a broader view of intelligence that leads to educational systems that more fully promote lifelong learning and success (Sternberg, 1997). His theory outlines three components of intelligence:

1. *Meta-components*. "The executive processes used to plan, monitor, and evaluate problem solving"
2. *Performance components*. "The lower-order processes used to implement the commands of the meta-components"
3. *Knowledge-acquisition components*. "Processes used to learn how to solve problems in the first place" (p. 59)

Unlike Gardner, these three components are not independent, but rather work together to define intellect. And, as adults age, continued learning makes all three components stronger, allowing intellect to continue to increase, despite any age-related decline in memory or sensory capacity.

All theories of intellectual development point to the importance of adult experience. The recurring theme in all these conceptions is that adults grow as learners because of their life experiences. It is likely that experience enables adults to apply their learning more effectively as it strengthens their ability to manage learning processes. Conversely, as adults become better at applying their learning and managing their learning processes, they expect opportunities to do just that. In andragogical terms, they seek more control over their learning process. A multidimensional view of intelligence also reinforces the notion that there are certain learning situations in which adults may not be ready for a pure andragogical approach. If certain types of intelligence do decline as adults age (e.g., fluid intelligence) and they become increasingly reliant on experience to compensate, then learning totally new material unrelated to prior learning will be more challenging.

Cognitive Controls

The cognitive control that has been the most extensively researched and has received the most attention in adult learning literature is *field dependence/independence* (Joughin, 1992; Smith, 1982). It refers to "the degree to which the learner's perception or comprehension of information is affected by the surrounding perceptual or contextual field" (Jonassen and Grabowski, 1993, p. 87). Field dependents tend to see and rely on the cues in the environment to aid in understanding information, whereas field independents tend to learn independent of external cues.

There are many implications that arise from this difference that affect learning. Research-based findings (Jonassen and Grabowski, 1993) on learning and instruction include the following:

Field-dependent learners:

- Like group-oriented and collaborative learning
- Prefer clear structure and organization of material
- Attend to the social components of the environment
- Respond well to external reinforcers
- Prefer external guidance

Field-independent learners:

- Like problem solving
- Prefer situations in which they have to figure out the underlying organization of information (e.g., outlining)
- Like transferring knowledge to novel situations
- Prefer independent, contract-oriented learning environments
- Respond well to inquiry and discovery learning

As Joughin (1992) suggests, field dependence/independence may have its greatest impact on self-directed learning for adults. At first glance, it would appear that field dependents would be more limited in their ability to develop strong self-directed learning skills. Indeed, the behaviors exhibited by field-independent types are most often those

ascribed to more "mature" adult learners: independent, critical reflection, goal-oriented, self-organizing, and so forth (Even, 1982). Joughin (1992) suggests that the capacity for self-directed learning may be more limited in field-dependent types. He goes on to cite others (Chickering, 1977; Even, 1982; Mezoff, 1982) who suggest similar lines of thinking.

We tend to agree with Brookfield (1986) in urging caution about this conclusion. As discussed earlier, we must distinguish between the *behaviors* of self-teaching, with the internal cognitive process of feeling and acting with *autonomy*. It seems possible that a field-dependent person might exhibit self-directed behaviors that are quite different from those of a field-independent person. Brookfield goes on to suggest that field-dependent persons are more aware of context, which contributes to critical thinking and facilitation skills. He cites his own research that showed that successful independent learners cited networks of learners as their most important resource. Field-dependent persons might be more likely to develop such networks.

Most measures of self-directedness assess behaviors, not internal feelings of autonomy. It seems clear that field independence/dependence could affect the *manner* in which self-directed learning is conducted. If learners are forced into a traditional mode of independent learning, field-independent persons may indeed excel. However, we suspect that if internal feelings of autonomy were assessed, both types could be shown to be effective self-directed learners. As Brookfield (1988) and Caffarella and O'Donnell (1988) note, research indicates that the field-independent type of self-directed learning is more typical of males, the middle-class, and U.S. culture. It seems possible, then, that field-dependent persons (as well as other cultures, gender, and socioeconomic status) are likely to choose different styles of independent learning, probably using networks of people and seeking more assistance, but they still feel quite autonomous. Learning professionals will have to allow room for alternate styles to emerge and should avoid forcing all learners into a field-independent style of self-directed learning, which is the traditional definition.

Cognitive Styles

The terms *learning style* and *cognitive style* are often erroneously used interchangeably. Cognitive styles are thought to be more stable traits and refer to a person's typical manner of acquiring and

processing information (Messick, 1984). Learning style is a broader concept, embracing more than just cognitive functioning, and refers to more general preferences for types of learning situations. Some learning style taxonomies include cognitive styles as one type of learning style (Flannery, 1993; Hickcox, 1995). Although not totally incorrect, we prefer to separate them.

Acquiring information. Learners tend to have characteristic ways in which they prefer to receive information. Traditionally, cognitive pyschologists have divided them into three categories: visual, verbal, and tactile or psychomotor (Jonassen and Grabowski, 1993; Wislock, 1993). Others, such as James and Galbraith (1985), expand the list to seven elements (or more): print, aural (listening), interactive, visual, haptic (touch), kinesthetic (movement), and smell. The implication of this work is that adult learning professionals should design learning experiences that accommodate multisensory preferences.

Processing information. One of the most common distinctions is made between *global* versus *analytical* (or holist versus serial) information processing. Global persons tend to take in the whole picture first, then the details. They focus on multiple elements of the subject at once and look for interconnections among elements. Analytical persons are completely different in that they prefer to process information in a step-by-step linear manner, focusing on one element of the subject at a time. These characteristics are closely related to the intuitive versus sensing scale of the Myers-Briggs Type Indicator.

The implication of this for learning professionals is that information must be presented in multiple approaches so that different learners can understand it. Swanson (see Chapter 12) proposes the "whole-part-whole" approach to learning in which learners are presented with the global picture, the parts of information, and the global perspective is repeated with application.

Learning Styles. Learning styles refer to the broadest range of preferred modes and environments for learning. Though there is little uniformity in the way researchers define them, they tend to differ from cognitive style in two key ways: (1) learning styles include cognitive, affective, and psychomotor/physiological dimensions, and (2) they include characteristics of instruction and instructional settings along with learning. James and Blank (1993) and Smith (1982) provide a useful summary of available instruments. Table 10-2 describes some representative learning-style theories and associated instruments.

Table 10-2
Representative Learning Style Systems

Researcher	Style dimensions	Instrument(s)
Cognitive learning style systems		
Kolb (1984)	Two dimensions (perceptual and processing) proposed: concrete experience vs. abstract generalization, and active experimentation vs. reflective observation. Results in four styles: divergers, assimilators, convergers, and accomodators	Learning Style Inventory (1984)
McCarthy Gregorc (1984)	Two dimensions (perceptual and processing) proposed: abstract vs. concrete experience, and sequential vs. random ordering of information. Results in four styles, though ranges are allowed: concrete sequential, concrete random abstract sequential, and abstract random	4MAT system Gregorc Learning Style (1984)
Cognitive, Affective, and Physiological Systems		
Dunn and Dunn (1974), Dunn, Dunn and Price (1989)	Assesses 20 factors in four groups: environmental, sociological, emotional, and physical preferences.	Learning Style Inventory (1989) (for children) Productivity Environmental Preference Survey (1989) (for adults)
Canfield (1988)	Assesses 20 factors in four groups: conditions of learning, content of learning, mode of learning, and expectations of learning	Canfield's Learning Style Inventory
Personality Systems (with implications for learning)		
Briggs and Meyers (1977)	Assesses four scales: extraversion vs. introversion; intuition vs. sensing; thinking vs. feeling; and judging vs. perceiving	Myers-Briggs Type Indicator (MBTI)

Costa and McRae (1992)	Assesses "big five" personality dimensions: neuroticism, extraversion, openness, agreeableness, conscientiousness. Emerging as a strong research-based approach to personality assessment	NEO-PI-R

Learning-style research has shown both great promise and great frustration. On the one hand, learning styles have great face validity for learning professionals. Most know intuitively that there are differences in styles among the adult learners with which they work. By considering various dimensions of style differences, they are often able to improve learning situations and reach more learners.

On the other hand, all of the learning style systems have suffered from limited research, questionable psychometric qualities of the instruments, and mixed research findings. Kolb's theory and accompanying instrument, the Learning Style Inventory (LSI), have come under particularly harsh critique (Kolb, 1981; Stumpf and Freedman, 1981; Reynolds, 1997), perhaps because it is one of the older and better documented theories. However, more recent work suggests that the constructs in Kolb's theory may be valid, but not measured correctly by the LSI (Cornwell and Manfredo, 1994).

There can be little question that the research support for learning styles is mixed at best. One key reason is that there is no unifying theory or generally accepted approach to learning style research and practice. Another flaw in most critiques is that they fail to separate the validity of learning-style theory and constructs from the measurement issues. A theory cannot be dismissed simply because we don't yet know how to measure it. Of course, neither can a theory be assumed valid until it can be measured and researched. For example, just because Kolb's LSI has not withstood rigorous instrument validation (Reynolds, 1997) does not mean that his theory is invalid. It could mean that we simply don't know how to measure the constructs yet.

This confusion has led some researchers to urge appropriate caution in using learning styles (Bonham, 1988; James and Blank,

1993). We agree with the cautions, but also urge caution in rejecting them, particularly when the phenomenon continues to be regularly observed by researchers and practitioners. We also agree with Merriam and Caffarella (1991) and Hiemstra and Sisco (1990) that learning-style instruments are best used at this point to (1) create awareness among learning leaders and learners that individuals have different preferences, (2) as starting points for learners to explore their preferences, and (3) as catalysts for discussion between leaders and learners about the best learning strategies.

Summary of Individual Differences Perspectives

Research in individual differences has been instrumental in advancing understanding of individual differences in adult learning behaviors. As noted, there remains much uncertainty in the research, but the key point is clear: Individuals vary in their approaches, strategies, and preferences during learning activities. Few learning professionals would disagree. At one level, merely being sensitive to those differences should significantly improve learning. Even better, the more that is understood about the exact nature of the differences, the more specific learning theorists can be about the exact nature of adaptations that should be mode.

Understanding of individual differences helps make andragogy more effective in practice. Effective adult learning professionals use their understanding of individual differences to tailor adult learning experiences in several ways. First, they tailor the manner in which they apply the core principles to fit adult learners' cognitive abilities and learning-style preferences. Second, they use their understanding of individual differences to know which of the core principles are applicable to a specific group of learners. For example, if learners do not have strong cognitive controls, they may not initially emphasize self-directed learning. Third, effective adult learning professions use their understanding of individual differences to expand the goals of learning experiences. For example, one goal might be to expand learners' cognitive controls and styles to enhance future learning ability. This flexible approach explains why andragogy is applied in so many different ways (Knowles, 1984).

Learning How to Learn

Much of the emphasis in individual difference research is on how learning professionals should alter their learning facilitation and leadership to make learning more meaningful to learners. A complementary response has been an emphasis on helping learners expand their learning abilities through "learning-how-to-learn" interventions. Although almost all the evidence is anecdotal, learning how to learn holds great promise for helping adults to expand their learning effectiveness.

Smith (1982) defines learning how to learn: "Learning how to learn involves possessing, or acquiring, the knowledge and skill to learn effectively in whatever learning situation one encounters" (p. 19). "We describe the person who has learned how to learn as capable of learning efficiently, for many purposes, in a variety of situations, no matter what the method" (p. 20).

Gibbons (1990) offers a useful model that helps clarify the range and scope of learning-how-to-learn research and practice. First, she suggests that learners need to be effective at learning in three *kinds of learning:*

1. *Natural learning.* Learning that occurs as the individual interacts spontaneously with the environment. Skills include learning from interaction with others, the environment, exploration, practice, and the teacher within.
2. *Formal learning.* Learning in which the content is chosen by others and presented to the learner. Skills include learning from instruction, assigned learning tasks, basic learning skills, and how to generalize from a learning activity.
3. *Personal learning.* Self-directed, intentional learning activities. Skills to be learned include learning to decide what to learn, how to manage the learning process, how to learn from experience, how to be an intentional learner, and how to take learning action.

The second dimension defines three *aspects of learning*:

1. *Reason.* The executive operation, more concerned with the management of thinking than the thinking itself. Closely

related to meta-cognition or cognitive strategies (Weinstein and Mayer, 1986), a key element of reason's role in thinking is learning to improve one's ability in perceiving, analyzing, proposing, imagining, and reflecting.

2. *Emotion.* Responding with feeling, developing commitment, and acting with confidence. Key elements in this aspect are experiencing feelings, clarity, developing confidence, developing determination, and trusting intuition.
3. *Action.* Using learning to take meaningful action. Key elements include making decisions, taking initiative, practicing, solving problems, and influencing others.

Finally, there are three *domains of learning* in which adults must be effective:

1. *Technical.* Instrumental learning to conduct the practical activities of work and life.
2. *Social.* Learning how to relate to others for mutual benefit.
3. *Developmental.* Learning how to develop oneself as a person and a learner.

Smith (1982) suggests that there are three interrelated components to learning how to learn that are useful to help learners become more effective: needs, learning styles, and training.

Needs

Learners have a variety of needs if they are to grow as learners. Smith (1982) divides them into four groups (see Figure 10-1). First, learners need general understandings about learning and its importance to develop a positive attitude and motivation to learn. Next, they need basic skills such as reading, writing, math, and listening to be able to perform in learning situations. Third, they need to understand their personal strengths and weaknesses as learners, as well as their personal preferences for learning situations and environments. Finally, they need the skills to perform in three learning processes: self-directed, collaborative, and institutional. Self-directed learning requires highly developed skills for planning, directing, and monitoring one's own learning. Collaborative learning requires strength

in teamwork and interpersonal skills. Institutional learning requires basic study skills such as taking notes, writing, and test taking.

Learning Style

The core premise of learning style is that individual learner preferences will lead to learners being less effective in learning situations that require them to leave the comfort of their preferred learning strategies and styles. And, because it is completely unrealistic for a person to expect that all learning situations and leaders will accommodate their personal style, they will find themselves in many situations outside their comfort zone. Unless they develop a broader array of learning skills, they will struggle in those situations that don't fit their natural style. Furthermore, learning-how-to-learn theorists believe that learners do not have to be limited to only their natural strengths. That is, people can learn how to learn differently from ways they naturally prefer.

The array of skills and abilities grouped under the learning-how-to-learn label is diverse. Essentially, it involves learning how to function from an "opposite" style on every individual difference discussed so far. If you are a field-independent person, it means learning to learn in a field-dependent manner. If you have strong academic skills, but weak practical intelligence, it means developing

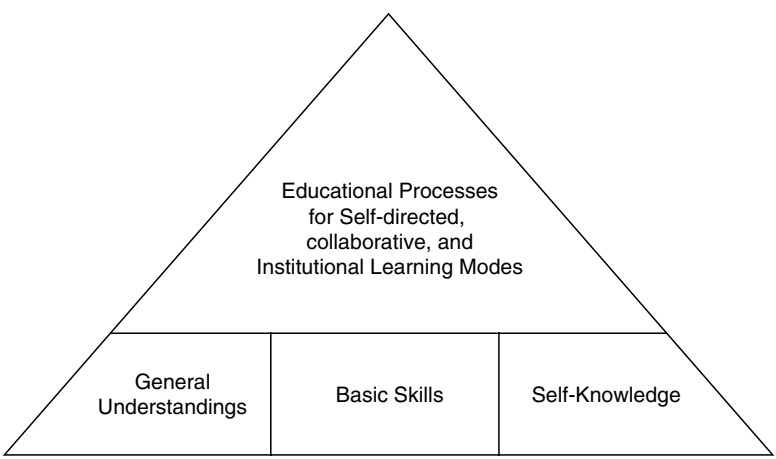

Figure 10-1. *Learning how-to-learn needs (Smith, 1982).*

practical intelligence. If you are a global learner, it means learning to learn more analytically and so on.

Training

This third component refers to deliberate efforts to help learners develop the skills they lack. Such training might include workshops, coaching, self-study, and practice. Training topics might range from basic study skills taught in schools to learning-style workshops.

The promise of learning how to learn is becoming more important in a world economy that is increasingly dependent on knowledge and intellectual capital and faced with rapid change. For organizations, it has become increasingly important that employees be highly skilled learners so they can learn new technologies and adapt to changing market demands. For individuals, a person's job security is increasingly dependent on an ability to grow and learn, sometimes in rather radical ways. Adults today are often faced with demands to learn and relearn their jobs multiple times in a career. Those who do not have strong learning skills usually face layoffs.

It is for this reason that the American Society for Training has identified learning how to learn as one of the basic skills workers need (Carnevale, Gainer, and Meltzer, 1990). The U.S. Department of Labor has included it in their SCANS model of skills workers need to develop to be competitive in today's workplace (The Commission on the Skills of the American Workforce, 1990). As more states focus on enhanced workforce development systems, learning how to learn is likely to become more important.

DEVELOPMENTAL PERSPECTIVES ON ADULT LEARNING

Adults do not become adults in an instant—it is a developmental process. In addition, researchers now understand that development does not end when adulthood is reached, but rather continues to progress in a variety of ways. Adult development theories have a profound influence on thinking about adult learning because adults' learning behavior varies considerably due to developmental influences. What is not clear is exactly how it changes, largely because adult development theory is still mostly an array of untested models.

It is impossible to fully capture the considerable complexity of adult development theory in a chapter. Our purpose in this section is to discuss ways in which adult development theory suggests adult learning behavior might vary from the adult learning core principles. By necessity in an introductory book, our discussion of adult learning theories will be somewhat limited, focusing on a few representative models. Readers seeking a more complete discussion of adult development should consult Bee (1996), Tennant and Pogson (1995), Knox (1977), or Merriam and Caffarella (1991).

Tennant and Pogson (1995) explain why adult development matters:

> The identity of adult education as a field of study is largely premised on the identity of the adult. Much of the adult education literature, especially the literature on adult learning, makes reference to the distinct attributes of adults, and builds a rationale for practice based on these distinct attributes. . . . Because adult education necessarily involves some kind of intervention in the lives of participants, it is important for adult educators to recognize the nature and limits of this intervention, and to locate their intervention in some kind of life-span framework. (p. 69)

Overview of Adult Development Theories

Adult development theories are generally divided into three types: physical changes, cognitive or intellectual development, and personality and life-span role development (Merriam and Caffarella, 1991; Tennant and Pogson, 1995). Cognitive development theory's primary contributions are twofold. First, they help to explain some differences in the way adults learn at different stages in their lives. Second, they help explain why the core learning principles are exhibited in different ways at different stages of life. Role development theory's primary contributions are to help explain when adults are most ready for and most need learning and to explain when they may be most motivated to learn.

Bee (1996) characterizes development theories as varying along two dimensions. Some theories focus on *development*, and some focus on *change* during adult life. *Development theories* imply a hierarchical ordering of developmental sequences, with higher levels being better than lower levels. They include a normative

component, which suggests that adults should progress to higher levels of development. Many of the cognitive development theories fit into this category. Consider, for example, about how your thinking and perspectives on issues have matured during your life. As you have aged, you have probably developed a more balanced perspective on life and begun to recognize that there are many diverse and valid opinions. This change represents a maturation and development process to what is generally considered a preferred level of thinking.

Change Theories

These theories are merely descriptive of typical changes experienced by adults. There is no normative hierarchy intended, so one phase is not better than another. The theories seek merely to describe typical or expected changes. Many of the life-span role development theories fit into this category. Think about your life and the many changes you may have experienced that are typical of many adults—going to school, setting up a home, getting married, having children, experiencing death of a parent, and so on. There is no developmental order implied here, simply a sequence of events.

The second dimension along which these theories vary is whether they include defined *stages*, or *no stages*. Stage theories imply fixed sequences of sequentially occurring stages over time. Stage theories are quite common, and are best represented by Levinson's (1978) theory of adult development. Others offer no such fixed sequence of events. According to Bee (1996), Pearlin's (1980) theory of sources of adult distress over the life span is a good example.

We tend to agree with the prevailing thinking today that there is no one theory that is "best." Rather, adult development should be viewed as consisting of multiple pathways—multidimensional (Daloz, 1986; Merriam and Caffarella, 1991). This position is not intended to be an easy way out, but rather acknowledges the complexity of adult development. Adults develop along multiple dimensions simultaneously. The challenge for adult educators is to understand development well enough to recognize which dimensions are most relevant to a particular group of learners in a particular learning situation. That is our emphasis in this chapter.

Life-Span Role Development Perspectives

The core contribution that life-span development theories make to working with andragogical principles of adult learning is in clarifying and refining adult readiness to learn. The premise of all these theories is that there are certain predictable types of changes that occur throughout an adult's life. Life change is often an adult's primary driving force for learning. As the core principles of andragogy state, adults are most ready to learn when the learning meets an immediate life need, and are most motivated when it fills an internal need. Understanding the changes and transitions in adults' lives enable adult educators to:

- Anticipate learning needs that arise at various life points.
- Understand how life events facilitate or inhibit learning in a particular situation.
- Prepare adults for life changes.
- Capitalize on "teachable moments" (Havigurst, 1972) to accelerate learning.
- Plan learning experiences that are more meaningful.

Think about your own life course for a moment. How have the events of your life led you to or away from learning? How have your learning needs changed as you progressed through life? How have life events affected your motivation to engage in learning? How has learning changed your life course? I suspect that most readers will immediately feel the importance of life-span development to adult learning.

Life-span theories. Perhaps the best known of this group of theories are those describing the life course, and the best known of those was proposed by Levinson (1978, 1986) because it was popularized by Gail Sheehy's book *Passages* (1974). Levinson divides adult life into three eras: early adulthood (ages 17–45), middle adulthood (ages 40–60), and late adulthood (age 60+). Life then consists of alternating periods of stability and transitions. Each era brings with it certain predictable tasks, and each transition between eras certain predictable challenges (see Table 10-3). It was Levinson's work that made mid-life crisis a part of American culture. Although Levinson's model has drawn much criticism, primarily for its highly structured view of adult life, it has persisted as a core development theory.

Table 10-3
Levinson's Life Task Developmental Model

Developmental Period	Age Group	Task
Early adult transition	17-22	Explore possibilities and make tentative commitments
Entering the adult world	22-29	Create first major life structure
Age 30 transition	29–33	Reassess life structure
Settling down	33-40	Create second life structure
Midlife transition	40-45	Ask "what have I done with my life?"
Entering middle adulthood	45-50	Create new life structure
Age 50 transition	50-55	Minor adjustments to middle life structure
Culmination of middle adulthood	55-60	Build second middle life structure
Late life transition	60-65	Prepare for retirement and old age
Late adulthood	65+	Create late life structure and deal with declines of old age

Identity development. Another widely known and influential theory is Erikson's theory of identity development. Erikson proposed that an adult's identity develops through resolution of eight crisis or dilemmas (see Table 10-4).

If successfully resolved, each dilemma gives a person a certain strength. Erikson also believes that these dilemmas present themselves at certain predictable ages.

Ego development. Loevinger (1976) proposed a 10-stage model of ego development progressing from infancy to adulthood (see Table 10-5). Unlike Erikson or Levinson, Loevinger does not presume that adults progress through all stages. In fact, many get stuck in the middle stages. For adults, the developmental tasks are

Table 10-4
Erikson's Stages of Identity Development

Approximate Age	Stage	Potential Strength to be Gained
0-1 years	basic trust versus mistrust	Hope
1-3 years	autonomy vs. shame and doubt	Will
4-5 years	initiative vs. guilt	Purpose
6-12 years	industry vs. inferiority	Competence
13-18 years	identity vs. role confusion	Fidelity
19-25 years	intimacy vs. isolation	Love
25-65 years	generativity vs. self-absorption and stagnation	Care
65+ years	ego integrity vs. despair	Wisdom

generally to move from a conformist stage to a more individualistic or autonomous stage. This theory has important implications for the andragogical assumption of self-directedness, because the ego development stage may affect an adult's self-directedness.

Impact of Life-Span Theories. Regardless of whether one views the life course through Levinson's life stages, Erikson's developmental tasks, Loevinger's ego development, or some other life-span perspective, the impact on learning is similar. First, all three researchers say that adult life is a series of stages and transitions, each of which pushes the adult into unfamiliar territory. Second, each transition to a new stage creates a motivation to learn. If adult learning professionals listen closely to the motivations of their learners, they will often hear some form of life transition pushing the adult to learn. By understanding the developmental life span, practitioners can be more attuned to adults' motivations to learn.

Cognitive Development Perspectives

Like life-span developmental perspectives, cognitive development theories also help to clarify and refine the andragogical principles. The core premise of cognitive development theories is that changes occur in a person's thinking process over time. These changes may affect adult learners by:

Table 10-5
Loevinger's Stages of Ego Development

Stage	Description
Presocial stage	Baby differentiates himself from is surroundings
Symbiotic stage	Baby retains symbiotic relationship with mother
Impulsive stage	Child asserts separate identity
Self-protective stage	Child learns self-control of impulses
Conformist state	Child or adult models behavior after the group
Self-aware stage	Self-awareness increases as does acceptance of individual differences
Conscientious stage	Person lives by individually created rules and ideals
Individualistic stage	Person focused on independence vs. dependence
Autonomous stage	Adults are fully independent and can cope with inner conflict

- Changing the way they interpret new information
- Altering readiness for different learning experiences
- Creating differing views and interpretations of material
- Creating different degrees of meaningfulness for different people
- Creating different developmental learning tasks

Clearly, the more one knows about cognitive development, the more likely adult learning can be tailored to meet the needs of specific learners.

Consider how your personal views have changed during your adult life. Do you think about issues the same way you used to? Do you approach new information in the same manner? Do you find certain types of issues and learning more meaningful to you now than before? Most adults can chart progressions in their thinking that match at least some of the cognitive development theories.

The foundation of most adult cognitive development theories is the work of Piaget (Merriam and Caffarella, 1991). Piaget hypothesized that children move through four stages of thinking: *sensory motor*, *preoperational*, *concrete operational*, and *formal operations*. Formal operations, at which a person reaches the ability to reason

hypothetically and abstractly, is considered the stage at which mature adult thought begins, though many adults never reach it. Because he was a child development specialist, Piaget's model implies that cognitive development stops upon reaching adulthood. Adult development theorists dispute that idea and have focused on various ways that cognitive development continues beyond *formal operations*. The following are some selected examples.

Dialectic thinking. Dialectic thinking is a level of thinking at which a person comes to see, understand, and accept alternate views and truths about the world, and the inherent contradictions in adult life. At this stage, the search for single truths and approaches to life is abandoned. A number of theorists have proposed dialectic thinking stages. Kramer (1989) and Riegel (1976) both suggested stage models of dialectic thinking that directly parallel the four stages of thought proposed by Piaget. In their view, dialectic thought develops along with formal operations and occurs in children at a low level. Others have looked at dialectical thinking as some type of extension to Piaget's four stages. Pascual-Leone (1983) proposed four stages of dialectic thought that occur after formal operations. Benack and Basseches (1989) also proposed four stages of post-formal thought that result in dialectic thinking.

Though the exact nature of its development is unclear, it does seem clear that dialectic thinking is an important developmental task for adults. Dialectic thinking enables adults to make peace with the complexity of life in which few truths exist and in which numerous contradictions and compromises are confronted daily. At some point, adults begin to realize that these are not wrong, but are inherent in life.

Other post-formal operations. Other theorists have recognized that thinking develops beyond formal operations, but propose different types of post-formal operations. For example, Arlin (1990) proposed a fifth stage of development, the problem-finding stage. Labouvie-Vief (1990) suggested that the hallmark of mature adult thought was the ability to make a commitment to a position or life course, despite recognizing the many different possibilities. That is, once one realizes the dialectic nature of life, a person must still make choices and commitments.

Relativistic thinking. Closely related to dialectic thinking is relativistic thinking. Perry (1970) proposed a nine-stage model of cognitive development based on his research with college students. These

stages describe change from dualistic, right-wrong, black and white type thinking to more complex relativistic thinking. Relativism indicates that knowledge is contextual, and there are few truths. In that sense, Perry's work is similar to dialectic thinking, but different in that he does not describe it as a post-formal operation.

Impact of Cognitive Development Theories

Cognitive development theories are particularly useful in helping adult learning professionals understand why some adults struggle with highly complex issues that require dialectical or relativistic thinking. For example, some adult educators stress helping adults develop critical thinking skills (Brookfield, 1986). Critical thinking requires adults to be able to challenge assumptions that guide their lives, which also requires a higher level of cognitive development to recognize that there are multiple "correct" ways to live. Critical thinking may be a significant development step for a learner who has not reached that stage.

Implications from Developmental Theories

Although few of the theories about adult development have been thoroughly tested, they have persisted because most adults intuitively recognize that development continues throughout adult life. These theories provide the best framework available for understanding that development. A close examination of the development literature suggests these implications for adult learning:

- Adult learning is inextricably intertwined with adult development.
- Adult development occurs along multiple paths and multiple dimensions.
- Adult learning will vary primarily with stages of cognitive development.
- Motivation and readiness to learn will vary primarily according to stage of life-span development.
- Adult learning facilitators must be attentive to learners' stage of development, and tailor learning experiences to fit that developmental stage.

Summary

This chapter focused on the individual differences perspective of psychology, developmental perspectives, and life-span development perspectives that enhance the core learning principles of andragogy. The individual differences perspective advocates that instructors adapt their teaching methodologies to accommodate differences in individual abilities, styles, and preferences. Theoretically, the result of such accommodation is increased learning outcomes. The research to support this contention is, however, mired in methodological problems. Thus, there is relatively little empirical evidence to support this premise. Yet, individual case studies, anecdotes, and current research efforts continue to sustain the individual differences perspectives.

Individual differences can be classified into broad categories of cognitive, personality, and prior knowledge. Cognitive differences can be further classified into the sub-categories of cognitive abilities, cognitive controls, cognitive styles, and learning styles. There is an extensive list of characteristics that could be included in each category, but the individual differences that most directly impact adults' learning behavior described in the andragogical model are intelligence, field dependence/independence, learning style, locus of control, and prior knowledge.

Teaching learners how to learn serves as the complement to adjusting the instructional methodology. The fundamental precept in this response is that by broadening learning capabilities, learners can more readily adapt to a wide range of learning situations, thereby increasing the learning outcome. Learning how to learn has become increasingly important in the workplace. For employees to successfully obtain and retain their positions, they must be able to learn in a variety of learning environments. Employees are not often afforded the luxury of selecting their own learning situation and methodology and, consequently, must adapt or face the possibility of the loss of a job.

The developmental perspective of adult learning focuses on the progressive aspect of becoming an adult—it is not a status that is achieved instantaneously. Adult development theories are generally divided into three types: physical changes, cognitive or intellectual development, and personality and social role development. And, according to Bee, development theories vary only in two dimensions.

The first of these dimensions involves development and change. Development theories imply a hierarchical ordering of developmental sequences, and change theories are descriptive of changes typically experienced by adults. The second variance revolves around the inclusion or exclusion of stages. Stage theories imply fixed, sequentially occurring stages.

Life-span development theories clarify and refine adult learning principles by addressing the readiness to learn aspect of the learning event. Grounded in the premise that certain predictable types of changes occur in an adult's life, these changes often trigger a learning need.

REFLECTION QUESTIONS

10.1 Discuss the relative significance of cognitive, personality, and prior knowledge differences on adult learning,

10.2 As an adult educator, how would you use knowledge related to learning styles?

10.3 What is the difference between "learning and learning how to learn" and "learning"?

10.4 What is the utility of development theories when working as an adult educator?

CHAPTER 11

The Future of Andragogy

Although andragogy has a long history, there remain abundant opportunities and challenges ahead in terms of research and practice. This chapter examines some key issues in the development of the concept and philosophy of andragogy, future research needs, and developing applications in practice. This chapter is not meant to be all inclusive, but rather to identify the key issues that will shape the research and practice of andragogy in the coming years.

The Concept and Philosophy of Andragogy

The concept and philosophy of andragogy has taken on distinctly different meaning depending on what part of the world one is discussing. In the United States, andragogy is clearly associated with and shaped by Malcolm Knowles. Debates have raged about what to call it, but in his last writings Knowles (1989) called it a "conceptual framework that serves as a basis for an emergent theory" (p. 112). In the United States, andragogy is best identified as one perspective or theory on how adults learn, but it is not synonymous with the field of adult learning or adult education.

In Europe and other parts of the world, andragogy has a distinctly different meaning. Reischmann (2004) describes it this way:

> In most countries of Europe the Knowles-discussion played at best a marginal role. The use and development of "andragogy" in the

different countries and languages was more hidden, disperse, and uncoordinated—but steady. Andragogy nowhere described one specific concept, but was from 1970 on, connected with the, in existence, coming academic and professional institutions, publications, programs, triggered by a similar growth of adult education in practice and theory as in the USA. "Andragogy" functioned in Europe as a header for (places of) systematic reflections, parallel to other academic headers like "biology," "medicine," "physics." Examples of this use of andragogy are: the Yugoslavian (scholarly) journal for adult education, named "Andragogija" in 1969; the "Yugoslavian Society for Andragogy"; in 1993, Slovenia's "Andragoski Center Republike Slovenije" was founded with the journal "Andragoska Spoznanja"; Prague University (Czechia) has a "Katedra Andragogiky"; in 1995, Bamberg University (Germany) named a "Lehrstuhl Andragogik"; the Internet address of the Estonian adult education society is "andra.ee." On this formal level "above practice" and specific approaches, the term andragogy could be used in communistic countries as well as in capitalistic, relating to all types of theories, for reflection, analysis, training, in person-oriented programs as well as human resource development.

A similar professional and academic expansion developed worldwide, sometimes using more or less demonstratively the term andragogy: Venezuela has the "Instituto Internacional de Andragogia," since 1998 the Adult & Continuing Education Society of Korea publishes the journal "Andragogy Today." This documents a reality with new types of professional institutions, functions, roles, with fulltime employed and academically trained professionals. Some of the new professional institutions used the name andragogy—meaning the same as "adult education," but sounding more demanding, science-based. But throughout Europe still "adult education," "further education," or "adult pedagogy" is used more than "andragogy."

An academic discipline with university programs, professors, students, focusing on the education of adults, exists today in many countries. But in the membership list of the Commission of Professors of Adult Education of the USA (2003) not one university institute uses the name "andragogy," in Germany one out of 35, in Eastern Europe six out of 26. Many actors in the field

> seem not to need a label "andragogy." However, other scholars, for example Dusan Savicevic, who provided Knowles with the term andragogy, explicitly claim "andragogy as a discipline, the subject of which is the study of education and learning of adults in all its forms of expression" (Savicevic, 1999, p. 97, Henschke 2003, Reischmann 2003). This claim is not a mere definition, but includes the prospective function to influence the coming reality: to challenge "outside" (demanding a respected discipline in the university context), to confront "inside" (challenging the colleagues to clarify their understanding and consensus of their function and science), overall to stand to a self-confident academic identity.

The professional challenge is to acknowledge and coordinate these two views while maintaining their independence. The era in which the field of adult education in the United States debated adopting andragogy as its defining theory has past and it seems unlikely that the term *andragogy* will ever have the broad meaning in the United States that it does in Europe.

Research on Andragogy

The opportunities ahead related to research on andragogy are numerous. As Rachal (2002) points out, "Empirical examinations of andragogy—its science one might say—have tended to be inconclusive, contradictory, and few" (p. 211). He goes on to say that "the extensive anecdotal, expository, and polemical writing on the subject has tended to obscure empirical investigations, and most of the latter have been dissertations which rarely reach a wide audience" (p. 211). Yet, he notes that there have been persistent calls for more and better research on andragogy in the literature over the last 20 years (Cross, 1981; Davenport and Davenport, 1993; Merriam and Caffarella, 1991; Pratt, 1993). We see three clear directions necessary to enhance the science of andragogy.

Establish a More Clear Theoretical Definition

As stated above, Knowles labeled andragogy as an "emergent theory," which led Rachal (2002) to declare that one of the chief

impediments to strong empirical research is a lack of a clear definition of what constitutes andragogical practice. As discussed in Chapter 7, arriving at a clear definition is complicated by the fact that the application of andragogy in practice is governed by situational factors and the goals of the learning intervention. Thus, it is rare to encounter a "pure" application of andragogy. Rather, it is clear from Knowles's writings that there are degrees of "andragogyness" (Rachal, 2002) present in adult learning situations.

However, degree of application is not an excuse for inadequate theoretical development. Rather, it demands more precise theoretical explication for the conditions and variables that influence andragogical practice. The *andragogy in practice* (see Chapter 7) model is a first step toward a more precise theoretical framework that accounts for variable application. Future research must extend this conceptual framework toward a more precise theoretical model with researchable propositions to advance the science of andragogy.

Develop a Psychometrically Sound Measurement Tool

One of the primary reasons that stronger empirical research on andragogy has not emerged is there is no psychometrically valid instrument to measure the andragogical constructs. Attempts to develop such an instrument were unsuccessful for various reasons. Hadley (1975) and two derivations (Christian, 1982; Kerwin, 1979) appear to be the first to attempt to measure andragogy but were unsuccessful in deriving a suitable factor structure. Suanmali (1981) and Perrin (2000) developed short instruments that have unacceptable psychometric qualities. Knowles (1987) developed the instrument in Chapter 17 of this book but it has not been empirically validated. Conti's (1978) Principles of Adult Learning Scale (PALS) is probably the best validated scale in the literature but it was not developed specifically to measure andragogy, although there is considerable overlap with andragogy.

Thus, there is simply no instrument available to measure either the six assumptions or the eight process elements of andragogy. Empirical research on the theory cannot advance until there is an instrument that can reliably and validly measure these constructs in a learning situation. Of course, a clear theoretical definition is necessary in order to develop the instrument, which in turn can be used to test the theory.

Conduct Criterion Measurement Studies

The "holy grail" of research on andragogy is to empirically demonstrate that andragogical techniques lead to better outcomes. These outcomes should be in three areas: affective (learner satisfaction and motivation); learning; and learning utilization after the learning event, particularly in HRD settings.

As Rachal (2002) points out, criterion studies in andragogy are a particular challenge because of the conflicts it creates with learning assessment. In its purest form, andragogy is widely believed to advocate learner self-assessment of learning outcomes. Such an approach would be considered a weak measure in a research study. However, Rachal (2002) correctly clarifies this when he states that Knowles primarily advocated that the learning assessment (1) be mutually agreed to by the learners and facilitator and (2) be performance based rather than a traditional schooling oriented paper and pencil type test. In this form, it is entirely possible to construct valid research-quality measures of learning outcomes to conduct a strong test of andragogy.

Rachal (2002) goes on to suggest six other criteria for andragogical empirical studies, including (1) voluntary participation, (2) adult status, (3) collaboratively determined objectives, (4) measuring satisfaction, (5) appropriate adult learning environment, and (6) random assignment of participants if possible.

The Practice of Andragogy

There are two key opportunities for the practice of andragogy: adapting andragogy to the varying conditions encountered in practice, and optimizing the application of andragogy in technology-mediated learning.

Adapt Andragogy to Different Contexts and Conditions

Just as criterion studies are the "holy grail" of andragogical research, adapting andragogy to different contexts is the "holy grail" of andragogical practice. As we argue in Chapter 7, Knowles's thinking on andragogy evolved later in life to the realization that it would rarely be applied in pure form. Rather, he realized that each situation

and group of learners would require practitioners to make adjustments to apply it in different ways. In some instances, this might entail beginning with a pedagogical approach in order to develop learners toward an andragogical approach over time. In other instances, only a partial implementation of andragogy would be achievable. Of course in some instances, a complete andragogical strategy would work.

Still poorly defined is the issue of which modifications are demanded by certain conditions and circumstances. Today, this is clearly left to the art of professional practice. The andragogy in practice model provides new conceptual guidance to that art, but it is only a first step. One key new direction we see for the practice of andragogy is to develop a more clear definition as to how to vary the application of andragogy to fit varying circumstances. One example Knowles commonly used was that when leading a group of learners who are totally new to a body of information, then pedagogical strategies are often necessary until they have mastered the basics. Or, when leading learners with low levels of confidence, then strategies more appropriate for dependent learners would be recommended.

Our vision is something like a decision tree of key questions that practitioners ask about their learners and the learning situation, leading to adjusted andragogical strategies. Although this might offend andragogical "purists," as we argue in Chapter 7, this is the way Knowles intended for andragogy to be used and realized later in his life that it would work best. As he wrote in 1980, "What this means in practice is that we trainers now have the responsibility to check out which assumptions are realistic in a given situation. If a pedagogical assumption is realistic, then pedagogical strategies are appropriate, at least as a starting point. . . . Andragogy is not a panacea, but it is a system of idea that can improve the quality of learning" (p. 49). The challenge now is to put more structure to the artistry of professional application of andragogy to different contexts.

Andragogy and Technology-Mediated Learning

Knowles (1989) foresaw technology as one of the major forces shaping adult learning in the twenty-first century and a force that would be consistent with andragogy. We now see technology as a force that presents both great opportunities for andragogical adult learning, as well as presenting special challenges.

Technology presents bold new opportunities for providing adults with rich learning experiences in the andragogical tradition. First, it directly caters to adults' desire to be self-directed in their learning. Technology is inherently a self-directed learning media that enables adults to access learning in a just-in-time, just-enough format under conditions of full learner control. In many ways it can provide adult learners with the complete self-directed learning experience.

Second, well-developed computer-based instruction enables adults to tailor the learning experience to fit their prior experiences. Of course we are not talking about the simple "information put online" type instruction, but rather technology-based learning that allows users to select alternative paths through learning based on their prior learning and experiences. Although this requires more upfront investment in the technology, the result is more effective learning for adults.

Third, if properly designed, technology-based instruction easily allows learners to tailor the learning to their real-world problems. Because it is usually used in the learner's natural work or life setting, learners can immediately apply the learning to their problem settings. Furthermore, it often allows them to access "just enough" to solve the problems that led them to the learning in the first place.

Along with the opportunities come special challenges, primarily in the area of self-directed learning through the use of the Internet. The Internet is increasingly the first stop as a source of information for technology-rich nations, but this fact alone does not ensure learning. Side effects of the Internet appear to include learner impatience and shortened attention spans. Using the Internet as a primary tool for self-directed learning demands that the learners have very well developed self-directed learning skills. In this technological context, self-directed learning and andragogy are not optional. Whereas facilitators in a classroom setting have the option of adapting andragogy to fit the developmental stage of the adult learners, including being supportive or pedagogical if necessary, technology-based learning demands that learners be ready for self-directed learning. It is not uncommon for organizations implementing technology-based learning to discover that the intended learners do not have the metacognitive skills, motivation, or confidence to engage in the required level of self-directed learning.

Thus, not only does information technology allow for andragogy, but it requires that learners be ready for andragogy and for controlling their own learning. This puts special importance on the first step of Knowles's program planning model (see Chapter 6), "Preparing the Learners," to make sure learners are ready to capitalize on the opportunities technology presents and for the more fundamental skills of learning how to learn.

SUMMARY

Andragogy remains one of the preeminent models of adult learning and is often the first to be encountered by newcomers to adult learning. Despite the limitations, there are many opportunities ahead for andragogy in both research and practice. Although healthy debates about the process and purposes of adult learning will certainly continue, important substantive advances through research and practice are likely to occur that will continue to shape both the art and science of andragogy.

REFLECTION QUESTIONS

11.1 What are the relative strengths of the U.S. and European views off andragogy?

11.2 Propose a study focused on andragogy that you think is important and explain why it is important.

11.3 Discuss a specific strategy you would propose to advance andragogical concepts in context of adults using the Internet for learning purposes.

PART 3

Practice in Adult Learning

Insights, Tools, and Research Supporting Andragogy in Practice

CHAPTER 12

*Whole-Part-Whole Learning Model**

Human learning is one the most complex subjects of the scientific and scholarly world. While it is easy to demonstrate how little we know about the human mind, we can, on the other hand, acknowledge the sheer volume of research and common sense available to us to better understand the learning phenomena. We are not ignorant about the learning process. In fact, we know quite a bit about how people learn.

The origins of the Whole-Part-Whole Learning Model go back to 1972. At that time, the Johns-Manville Corporation contacted me to talk to the corporate training and education personnel about the psychology of learning. It became apparent that these people had a real need to improve their practice and that they wanted to be theoretically sound. They were not theoreticians, yet, they had an appreciation for the practical potential of sound theory. Two elements from that early presentation remain as key elements of the Whole-Part-Whole Learning Model (WPW Learning Model). The first element was to separate the field of learning psychology into two camps—the behaviorist/connectionist camp and the gestalt/cognitive camp. The second element was to acknowledge the value of each camp and to integrate it through Tolman's concept of "purposive-behaviorism" (1959).

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*Richard A. Swanson, Bryan D. Law (1993). *Performance Improvement Quarterly,* vol. 6, no. 1, pp. 43-53. This paper was originally presented to the European Conference on Educational Research, Enschede, The Netherlands, June 24, 1992.

Model Overview

This WPW Learning Model goes beyond the present holistic, behavioristic, whole-part, and part-whole learning models. The WPW Learning Model purports that there is a natural whole-part-whole rhythm to learning. The basic WPW Learning Model is seen in Figure 12-1.

Through the "first whole," the model introduces new content to learners by forming in their minds the organizational framework required to effectively and efficiently absorb the forthcoming concepts into their cognitive capabilities. The supporting cognitive capabilities and component behaviors are then developed in the classical behavioristic style of instruction found in the "part," or several parts, aspect of the WPW Learning Model. After the learner has successfully achieved the performance criteria for the individual "parts" or components within the whole, the instructor links these parts together, thus, forming the "second whole." The whole-part-whole learning experience provides the learner with the complete understanding of the content at various levels of performance and even allows for higher-order cognitive development to the levels of improvement and invention (Swanson, 1991).

The WPW Learning Model can be considered systematic on several counts. One is that the model can be used all the way from program design to real-time instructional adjustments during a live presentation. The following review of the literature supports both the psychological foundations of whole-part-whole instruction and its systemic nature.

Beyond the superficial rhetoric of broad purpose and goals, most education and training thrives on the "parts"—the details of knowledge, expertise, and activity (Skinner, 1954, 1968). Even though this behaviorist perspective on learning has been under intellectual attack, the pragmatic requirements of education and training in our

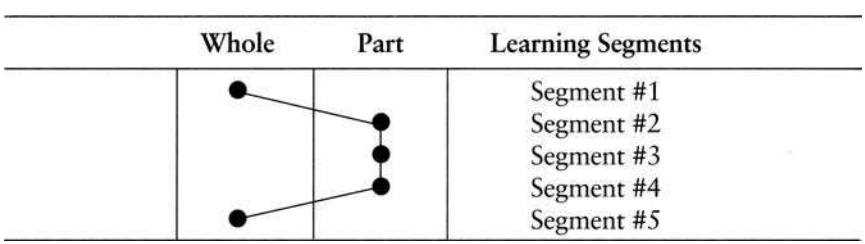


Figure 12-1. *Basic Whole-Part-Whole Learning Model.*

culture see to it that the "parts" and the mastery of the "parts" are as strong as ever. Without diminishing the behavioral stronghold on educational and training practices, it is the gestalt psychology concept that the whole is greater than the sum of the parts that is being more fully explored through this treatise. The approach is not to attack behaviorism. Behaviorism (the "parts") is seen as a critical aspect of WPW Learning Model. Instead, the focus is on the "first whole" and "second whole" that envelope the "parts."

THE FIRST WHOLE OF THE WHOLE-PART-WHOLE LEARNING MODEL

There are two main purposes of the "first whole." One is to provide a mental scaffolding through advance organizers and schemata alignment to prepare learners for the new instruction they will receive. The other main purpose of the "first whole" is to provide motivation for the participant to want to learn by making the content meaningful and connecting it to the learner.

Advance Organizers

The concept of an advance organizer was originally introduced by Ausubel (1968) as a technique for helping students learn and retrieve information by making it meaningful and familiar. This is accomplished by introducing the basic concepts of the new material, from which the students are able to organize the more specific information that will follow (Luiten, Ames, and Ackerman, 1980).

The need for advance organizers comes from the psychological principle that previous knowledge and experiences form their own mental structures at a given level of development (Di Vesta, 1982). These individual structures are called schemata. "We have schemata for eating in restaurants, attending hockey games, and visiting our grandmothers. The knowledge associated with each of these activities is our schema for the activity" (Gage and Berliner, 1988, p. 293). The participant's orientations that encompass the previous consequences and their interpretations of experiences represent that person's current world view (Di Vesta, 1982).

Understanding that differences in individuals are present is important for an instructor. For example, an instructor giving a lecture on quality management in industry to 30 students is in the room

with 30 different schemata, or mental structures, of what quality management in industry means. A unified concept in the classroom between the instructor and each of the students becomes an essential foundation for the instruction that follows.

A simple and powerful example of a unifying concept can be the editorial cartoon found in most daily newspapers. The effective editorial cartoon presents a clear concept to thousands of readers, each having their own personal schemata regarding that topic. Through the cartoon, readers have a common starting point for which to discuss the concepts with other readers, whether they agree with the original cartoon or not. Other examples of creating a unifying concept are video productions, literature (in the forms of essays, articles, or research), pictures and diagrams, and even music. All of these could be used in an instructional setting for the purpose of schemata alignment among students.

The act of creating a basic construct and/or framework for the learner at the beginning of instruction is a way to focus the learner and to introduce the content. These ideas are supported by Hilgard and Bower (1966) and Knowles (1988). The organization of knowledge should be an essential concern of the teacher or educational planner so that the direction from simple to complex is not from arbitrary, meaningless parts to meaningful wholes, but instead from simplified wholes to more complex wholes (Knowles, 1988).

Organization of knowledge in the beginning stages of instruction also serves the even larger purpose of memory retention and retrieval upon completion of instruction. "We have made it appear probable that association depends upon organization, because an association is the after-effect of an organized process. . . . Learning amounts to association, and association is the after-effect of organization" (Kohler, 1947, p. 163–164).

Motivating the Learner

Motivation on the part of the learner is an important aspect of the WPW Learning Model due to the fact that without learners valuing the new content that is being taught, there is little hope for retention or transfer to the workplace. However, many instructors leave student motivation in the hands of the students as their own responsibility. Support for the idea that motivation should be incorporated into a structured and systematic form of instruction

came first from Lewin (1951). "Learning occurs as a result of change in cognitive structures produced by changes in two types of forces: (1) change in the structure of the cognitive field itself, or (2) change in the internal needs or motivation of the individual" (Knowles, 1988, p. 23).

The potential for change in the motivation of an individual is possible due to the fact that human behavior is goal oriented. One of the distinguishable characteristics of human behavior is its purposeful, goal-directed nature (Gage and Berliner, 1988). Lindeman (1926), as cited by Knowles, gives a key assumption about adult learning that has been supported by later research. "Adults are motivated to learn as they experience needs and interests that learning will satisfy" (Knowles, 1988, p. 31).

Clearly, the opportunity to motivate the student comes from capitalizing on the learner's own internal desire for goal attainment and personal achievement. "Perseverance can be increased by increasing the expectation of reward and the bad consequences of failure" (Gage and Berliner, 1988, p. 334).

Motivation is also attained through clearly stated learning objectives at the beginning of instruction. Although much has been written about the value of clear, student-oriented terminal objectives for the purpose of evaluation, they also aid in motivation. Research done by Bandura in 1982 identifies the following two instructional motivational variables: "These two cognitive variables are self-efficacy (one's belief that one can execute a given behavior in a given setting) and outcome expectancies (one's belief that the given outcome will occur if one engages in the behavior)" (Latham, 1989, p. 265).

Clarifying instructional objectives for the instruction and the overall terminal objective meshes with the first component of motivation. By clarifying the purpose and rationale for instruction as it relates to the learner, then by detailing the how, what, and why of the instruction through clear objectives, the learner is fundamentally prepared for the instruction to follow.

To summarize, the importance of the "first whole" is found in the preparation of the learner for the instructional events to follow. This preparation will prove instrumental in the learners' recognition and recall on which the "second whole" is based (Kohler, 1947).

The Second Whole of the Whole-Part-Whole Learning Model

While it is true of any system that each element within the system is critical to the success of the system, in the Whole-Part-Whole Learning Model, the "second whole" must be considered the major component. Based on gestalt psychology that the whole is greater than the sum of the parts, it is here, in the "second whole," that we contend that complete understanding occurs.

The "second whole" links the individual "parts" back together to form the complete whole, for it is not only the mastery of each individual part of instruction that is important but also the relationship between those "parts" through the "second whole" that provides the learner with the complete understanding of the content.

Wolfgang Kohler, in his book *Gestalt Psychology* (1947), provides the basis for the "second whole" in his writings on association and recall. Kohler, using research done with animals, explains that because of the large amount of information that must be processed and stored, a simplification effect occurs. Simplification of large quantities of stimulus is narrowed down to only the outstanding features of the original stimuli. These outstanding features remain only as traces of the original stimulus. "Hence, only some effect of the first process (part) can remain when the process (part) itself has subsided. . . . All sound theories of memory, habit and so forth must contain hypothesis about memory traces as psychological facts" (Kohler, 1947, p. 149).

Knowing this about the cognitive capabilities of an individual, whole-part instruction becomes illogical. Ending instruction upon the completion of the final part leaves the learners with unorganized and vague traces of the preceding parts. The learners are also faced with the difficult task of organizing those parts into a whole on their own in order for the new knowledge to become useful. Kohler (1947) said of the organization of traces: "They must be organized in a way which resembles the organization of the original process. With this organization they take part in processes of recall" (p. 150).

The organization of the traces should be facilitated by the instructor, thus aiding the student in a comprehensive recall of the instructional material. Kohler (1947) speaks of the interrelationship between the organized traces (or parts): "When the members of a series are well

associated, they prove to have characteristics which depend upon their position in the whole series—just as tones acquire certain characteristics when heard within a melody" (p. 158).

To summarize, the interrelationship between the "parts" of the content begins with the realization that only traces from the full amount of instructional material will remain upon completion of instruction. It is essential, therefore, for the instructor to go back and strengthen those traces by forming the instructional whole (for example, whole concept, whole definition). Upon the formation of the instructional whole, the "parts" of instruction take on new meaning *within* the whole just as the tones acquire certain characteristics within the melody.

After the formation of the cognitive whole, the instructor must pursue the transfer of this new knowledge from short-term memory/working memory into the long-term memory. Information that is rehearsed is encoded for storage in the long-term memory (Gage and Berliner, 1988). Instructors can support this rehearsal by incorporating active learning (Gage and Berliner, 1988) into the "second whole." Active learning, in which learners take a participative role rather than a passive role, is incorporated in the "parts" instruction to aid in the mastery of the individual components. Furthermore, using active learning in the "second whole" will allow students to practice all of their skills in one continuous procedure. Production facilitates both learning and retention (Campbell, 1988; Perry and Downs, 1985).

Repetitive practice of the whole procedure not only aids in the transfer to long-term memory but it also provides the learner with a sense of comfort and eventually a relaxation with the procedure as a whole. Just as driving an automobile for the first time was a nervous collection of individual part performance, after a number of times behind the wheel, driving an automobile became a single procedure.

It is at this stage that the next step in the "second whole" may be pursued. The successful attempts by the learner on the complete procedure create in the learner a readiness for further understanding that until now was not available. According to Rosenshine (1986), further cognitive development can take place after automaticity, which he explains as follows: After substantial practice, students achieve an automatic stage where they are successful, and rapid, and no longer have to think through each step. The advantage of automaticity is that the students who reach it now can give their full

attention to comprehension and application. The full attention that the learners are now able to give provides the instructor with the opportunity and the responsibility to develop the instructional whole further through the introduction of a higher-level cognition that the learners are now ready for. The learner who has become successful at driving an automobile is now ready for further development with such topics as driving in poor weather, night driving, and the dangers of speeding. Previous to automaticity, this would not have been as effective. Instructors are ethically responsible for pursuing this further development of learning. For just as the driving instructor knows that operation of an automobile does not only occur on dry pavement during the daytime, successful practice in the classroom is not an automatic guarantee of success in the workplace.

A pattern will not often be repeated in precisely the environment in which it occurred when the association was formed. Now quite apart from the cruder obstacles that have been considered above, even a slight change of the surrounding field may make a given pattern unable to cause recall of associated items. This is because the change introduces a new organization in which the experiences corresponding to that pattern are no longer present (Kohler, 1947).

Kohler (1947) argues that instructors should prepare the learners for the differing applications through the analysis, synthesis, and evaluation (see Bloom, 1956) procedures or at least to the troubleshooting stage of comprehension (see Swanson, 1991). By developing the learner to this point, the instructor has not only formed the complete content whole in the learner's mind but has also provided a deeper understanding of that content whole upon which the learner can keep adding to and refining as experiences dictate. The "second whole" provides the opportunity to the delight both the instructor and the learner by moving from knowledge to wisdom. Dewey (1933) and others see this reflection as a major prerequisite to wisdom.

The Parts of the Whole-Part-Whole Learning Model

The parts' component of the Whole-Part-Whole Learning Model relies on the standard systematic and behavioristic approach to instruction. Thousands of books and articles have been written regarding the effectiveness of this approach to teaching specific,

structured material. To argue for what has already been established would be redundant. There are, however, some important points that should be addressed regarding this component of the WPW Learning Model. The first is that the learner must attain mastery of each "part" in order for the "second whole" to be effective. If the learner does not understand one of the "parts," there cannot be the full understanding of the whole. Next, each "part" within the WPW Learning Model can (and should) be structured in a whole-part-whole fashion. Thus, within the larger whole-part-whole instructional program design, there are sub-set whole-part-whole unit designs being created. This provides the learner with the same benefits in the individual lesson that the larger program design provides.

CONCLUSION

The Whole-Part-Whole Learning Model provides a systematic design framework for the instructor to follow. It lends itself to the practical work of designing education and training programs while holding on fiercely to learning theory and research. It provides a general whole-part-whole learning template. This learning template can be used at both the program design and lesson design levels. From a systems perspective, each of the program segments, whether they are classified as a part or a whole, can then constitute a subsystem. In curricular language, each program segment is a lesson. The initial lesson would therefore be focused on establishing the "first whole." Succeeding lessons would then take on the logical "part(s)" and the concluding "second whole" functions. Each of the program lessons (or subsystems) is then designed to use the same whole-part-whole template (see Figure 12-2).

The general program design of whole-part-whole lessons has been applied to the practical problem of differentiating between three

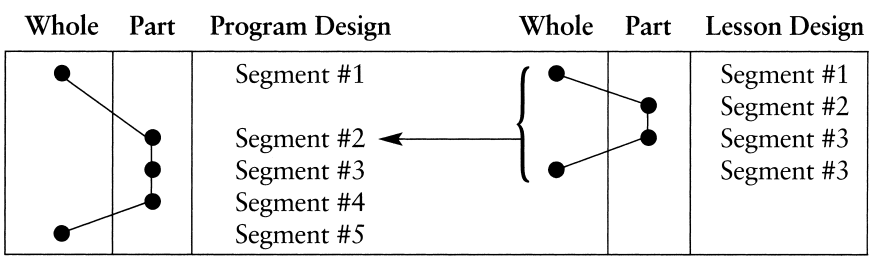


Figure 12-2. *Whole-Part-Whole Learning Model applied to program and lesson design.*

types of training: management, motivational, and technical training. Through a series of structured observations of good training practices, general WPW program design templates were developed for these three types of training. Figure 12-3 illustrates the general program template of lessons.

Technical Training Program Template of Lessons

	Whole-Part
1.	Operation/equipment/system Overview
2.	Start-up
3.	Operation
4.	Shut-down
5.	Defects/faults
6.	Troubleshooting
7.	Solo Performance

Motivational Training Program Template of Lessons

	Whole-Part
1.	Acceptance of group/individuals
2.	Problem/opportunity
3.	Fear/greed illustrations (with role models)
4.	The solution
5.	Solicit commitment to solution
6.	Vision success

Management Training Program Template of Lessons

	Whole-Part
1.	Objectives/Purpose of training
2.	Illustration of good/bad performance
3.	Conceptual model
4.	Elements of the model
5.	Techniques
6.	Practice/role playing
7.	Managerial implications discussion

Figure 12-3. *General program design templates using the whole-part-whole learning model.*

It is interesting to note the unique roles of the "first whole" among the three types of training programs. Most technical training is focused on closed systems that are external to the learner. These learners typically understand and accept the fact that work systems get revised and/or replaced. In contrast, most management training is an attempt to alter the personal internal systems by which managers operate and which they often resist changing. Thus, dealing with program objectives and purpose becomes the critical role of the "first whole" for management training, while overviewing the new system is more typical of technical training. In motivational training (efforts at altering basic values and beliefs), the "first whole" addresses the critical need to accept the group and/or individuals. The templates and their proposed elements provide a logical springboard for establishing the specific whole-part-whole lessons that make up a particular learning program.

As noted in the introduction, the Whole-Part-Whole Learning Model goes beyond the present holistic, behavioristic, whole-part, and part-whole learning models. The WPW Learning Model purports that there is a natural whole-part-whole rhythm to learning. The WPW Model is an effort to acknowledge and use theory and best practices to design sound learning programs.

REFLECTION QUESTIONS

12.1 What is the essential thinking undergirding the Whole-Part-Whole Learning Model?

12.2 Why is the Whole-Part-Whole Learning Model particularly helpful in planning adult learning?

12.3 Based on personal experience, report on a learning experience that did not honor the Whole-Part-Whole Learning Model and discuss what changes would need to be made to make it conform.

12.4 Based on differing content and objectives, what are some of the variations in the Whole-Part-Whole Learning Model?

CHAPTER 13

*From Teacher to Facilitator of Learning**

I was brought up to think of a teacher as one who is responsible ("accountable" is the current jargon) for what students should learn, how, when, and if they have learned. Teachers are supposed to transmit prescribed content, control the way students receive and use it, and then test if they have received it.

That is how all my teachers had performed. It was the only model of teaching I knew. When I was invited to teach at George Williams College in Chicago shortly after World War II, that is how I taught. At first I was pleased and proud concerning my performance. I was a pretty good transmitter. My content was well organized, with a good logical outline. I illustrated abstract concepts or principles with interesting examples. I spoke clearly and dynamically. I brought forth frequent chuckles. I invited interruptions for questions of clarification. I had lively discussions and practice exercises following my lectures. My tests were fair and produced a good curve of distribution.

I remember feeling so good when my students did what I told them to do, which was most of the time. Most of the students were preparing for careers as YMCA secretaries, and they were conscientious and well behaved. They took notes, did homework, and were able to feed back on the final exam (most of what I told them), with the A students remembering my very words. I felt psychically rewarded by

*Malcom S. Knowles. 1981. *Educational Materials Catalog*. Follett Publishing Co.

being such a good transmitter of content and controller of students. I was really a good teacher.

I had started taking courses toward a master's degree in adult education at the University of Chicago a year earlier, and my first courses were with teachers who did just about the same things I was doing in my course. Toward the end of my course at George Williams College, I enrolled in a seminar in psychological counseling at the University of Chicago under Professor Arthur Shedlin, an associate of Carl Rogers. I was shocked by what happened at the first meeting. Some 15 students sat around the seminar table for 20 minutes talking small talk. Finally, somebody asked if anyone knew where the teacher was. One of the people responded that his name was Art and that he had been designated by the Psychology Department to meet with us. Somebody else then asked if there was a course outline. Art responded, "You would like a course outline?" Silence for several minutes. Another student broke the silence by saying, "I'd like to know why everybody is here—what did you come to learn?" So we went around the table, stating our goals and expectations. When Art's turn came, he said, "I am hoping that you will help me become a better facilitator of learning."

NEVER BEFORE WORKED SO HARD

I won't attempt to reconstruct the ensuing events, but I can tell you that during the following week I read all the books Carl Rogers had written, located students who had taken the seminar and asked them what it was all about, and developed a plan for student inquiry teams, which I presented at the second meeting (which was adopted, with some modifications). I never read so many books and articles and worked so hard in any course I had ever taken. I had never before experienced taking that degree of responsibility for my own learning, alone and with other students, as I did in that seminar. It was exhilarating. I began to sense what it means to get turned on to learning. I began to think about what it means to be a facilitator of learning rather than a teacher. Fortunately, my next seminar, with Cyril O. Houle, reinforced this line of inquiry.

After my completion of the seminar with Cyril Houle, George Williams College asked me to teach adult education methods again. That was the day I decided to switch from being a teacher to being

a facilitator of learning. At the opening session I explained to the students that I wanted to experiment with a different approach to teaching, and described my own experience in being exposed to two role models—Shedlin and Houle—of the role of learning facilitator. I confessed that I was not secure about my ability to bring it off, since I had never done it before, that it would only work if they agreed to take a higher level of responsibility for their own learning, and that I wouldn't do it if they felt the risk was too high. They unanimously agreed to experiment with me.

I spent the rest of the first meeting having the students introduce themselves and identify their special interests and resources. I distributed a syllabus that listed the objectives the course was intended to help them accomplish and the content units (I called them "inquiry units"), with references to resource materials that would lead to the accomplishment of the objectives. I asked them which inquiry units they would take responsibility for during the week. In the second session I had them volunteer for the inquiry units they were especially interested in, and we formed "inquiry teams."

The inquiry teams met, with me as a roving consultant and resource person, for the next four weeks, and then the rest of the semester was spent with the teams putting on "show and tell" sessions. I had never seen such creative presentations and pride of accomplishment. By the end of that semester, I was a confirmed facilitator of learning.

Inquiry Units and Teams

When I analyzed what had happened to me, I was able to identify very fundamental changes. My self-concept had changed from teacher to facilitator of learning. I saw my role shifting from content transmitter to process manager and—only secondarily—to content resource.

I also experienced myself as adopting a different system of psychic rewards. I had replaced getting my rewards from controlling students with getting my rewards from releasing students. And I found the latter rewards much more satisfying.

Finally, I found myself performing a different set of functions that required a different set of skills. Instead of performing the function of content planner and transmitter, which required primarily presentation

skills, I was performing the function of process designer and manager, which required relationship building, needs assessment, involvement of students in planning, linking students to learning resources, and encouraging student initiative.

I have never been tempted since then to revert to the role of teacher.

Reflection Questions

13.1 What are the barriers to succeeding as a facilitator?

13.2 Given that there are times you need to be a teacher and other times a facilitator, what would you need to do to mentally prepare yourself for each role?

CHAPTER 14

*Making Things Happen by Releasing the Energy of Others**

Several years ago I began an intellectual adventure that has paid high dividends in terms of understanding the role of leadership and in selecting more effective leadership strategies. The adventure consisted of seeing what would happen if one conceptualized a social system (family, group, organization, agency, corporation, school, college, community, state, nation, or world) as a system of human energy.

All at once a set of questions very different from those typically asked by leaders started coming to mind: What is the sum total of the human energy available in the system? What proportion of this energy is now being used? Where is the unused energy located? Why is it not being tapped? What kinds of energy (physical, intellectual, psychic, moral, artistic, technical, social) are represented? What might be done to release this energy for accomplishing greater goals for the system and the individuals in it?

By virtue of simply asking these kinds of questions, I began to have to think differently about the role of leadership. Having been raised in the era of Frederick Taylor's "scientific management," I had perceived the role of leadership to consist primarily of controlling followers or

*Malcolm S. Knowles, *Journal of Management Development*, University of Queensland Business School, Australia, September 1983.

subordinates. Effective leaders, I had been taught, were those who were able to get people to follow their orders. The consequence of this doctrine was, of course, that the output of the system was limited to the vision and ability of the leader, and when I realized this fact I started rethinking the function of leadership. It gradually came to me that the highest function of leadership is releasing the energy of the people in the system and managing the processes for giving that energy direction toward mutually beneficial goals. Perhaps a better way of saying this is that creative leadership is that form of leadership that releases the creative energy of the people being led.

In the intervening years since this way of thinking emerged in my mind, I have been trying to understand it—and test its validity—in two ways. First, I have been observing leaders of various sorts (teachers, business executives, educational administrators, and organizational and political leaders) through this frame of reference. I have wanted to see if I could identify characteristics that "releasing leaders" possess that "controlling leaders" don't have. Second, I have re-examined the research literature on human behavior, organizational dynamics, and leadership to find out what support it contains for this way of viewing the concept of leadership. I would like to share with you the results of this bifocal inquiry in the form of the following propositions regarding the behavioral characteristics of creative leaders:

1. Creative leaders make a different set of assumptions (essentially positive) about human nature from the assumptions (essentially negative) made by controlling leaders. It has been my observation that creative leaders have faith in people, offer them challenging opportunities, and delegate responsibility to them. Two of the clearest presentations of these contrasting assumptions in the literature are reproduced in Table 14-1 by Douglas McGregor in the case of assumptions by managers and by Carl Rogers in the case of assumptions by educators.

   The validity of the positive set of assumptions is supported by research that indicates that when people perceive the locus of control to reside within themselves, they are more creative and productive (Lefcourt, 1976). The more they feel their unique potential is being used, the greater their achievement (Herzberg, 1966; Maslow, 1970).

Table 14-1
A Comparison of Assumptions about Human Nature and Behavior by Leaders in Management and Education

Theory X Assumptions about Human Nature (McGregor)* (Controlling)	**Assumptions Implicit in Current Education (Rogers)** (Controlling)**
The average human being inherently dislikes work and will avoid it if he can.	The student cannot be trusted to pursue his own learning.
Because of this characteristically human dislike of work, most people must be coerced, controlled threatened in the interest of organizational objectives.	Presentation equals learning. The aim of education is to accumulate brick upon brick of factual knowledge.
The average human being prefers to be directed, wishes to avoid responsibility, has relatively little ambition, wants security above all.	The truth is known. Creative citizens develop from passive learners. Evaluation is education and education is evaluation.
Theory Y Assumptions about Human Nature (Releasing)	**Assumptions Relevant to Significant Experiential Learning (Releasing)**
The expenditure of physical and mental effort is as natural as play or rest.	Human beings have a natural potentiality for learning.
External control and threat of when punishment are not the only means for bringing about effort toward organizational objectives. Man will exercise self-direction and self-control in the service of objectives to which he is committed.	Significant learning takes place the subject matter is perceived by the student as relevant to his own purposes. Much significant learning is acquired through doing.
Commitment to objectives is a function of the rewards associated with their achievement.	Learning is faciliated by student's responsible participation in the learning process.

Table 14-1 Continued

Theory X Assumptions about Human Nature (McGregor)* (Controlling)	Assumptions Implicit in Current Education (Rogers)** (Controlling)
The average human being learns, under proper conditions, not only to accept but to seek responsibility.	Self-initiated learning involving the whole person—feelings as well as intellect—is the most pervasive and lasting.
A high capacity for imagination, ingenuity, and creativity in solving organizational problems is widely, not narrowly, distributed in the population.	Creativity in learning is best facilitated when self-criticism and self-evaluation are primary, and evaluation by others is of secondary importance.
Under the conditions of modern industrial life, the intellectual potential of the average human being is only partially utilized.	The most socially useful thing to learning in the modern world is the process of learning, a continuing openness to experience, an incorporation into oneself of the process of change.

**Adapted from McGregor (1960), pp. 33–34 and 47–48 in Knowles (1978), p. 102.*
***Adapted from Rogers (1972), pp. 272–279 in Knowles (1978), p. 102.*

2. Creative leaders accept as a law of human nature that people feel a commitment to a decision in proportion to the extent that they feel they have participated in making it. Creative leaders, therefore, involve their clients, workers, or students in every step of the planning process, assessing needs, formulating goals, designing lines of action, carrying out activities, and evaluating results (except, perhaps, in emergencies). The validity of this proposition is supported by locus of control studies (Lefcourt, 1976) and by research on organizational change (Bennis, Benne, and Chin, 1968; Greiner, 1971; Lippitt, 1969; Martorana and Kuhns, 1975), administration (Baldridge et al., 1978; Dykes, 1968; Getzels, Lipham, and Campbell, 1968;

Likert, 1967; McGregor, 1967), decision making (Marrow, Bowers, and Seashore, 1968; Millett, 1968; Simon, 1961), and organizational dynamics (Argyris, 1962; Etzioni, 1961; Schein and Bennis, 1965; Zander, 1977).

3. Creative leaders believe in and use the power of self-fulfilling prophecy. They understand that people tend to rise to the expectations of others. The creative coach conveys to his team that he knows they are capable of winning; the good supervisor's employees know that she has faith that they will do superior work; the good teacher's students are convinced that they are the best students in school. The classic study demonstrating this principle, Rosenthal and Jacobson's *Pygmalion in the Classroom* (1968), showed that the students of teachers who were told that they were superior students were superior students; whereas the students of teachers who were told that they were inferior students were inferior students. And, of course, there was no difference in the natural ability of the two groups of students. The relationship between positive self-concept and superior performance has been demonstrated in studies of students (Chickering, 1976; Felker, 1974; Rogers, 1969; Tough, 1979) and in general life achievement (Adams-Webber, 1979; Coan et al., 1974; Gale, 1974; Kelly, 1955; Loevinger, 1976; McClelland, 1975).
4. Creative leaders highly value individuality. They sense that people perform at a higher level when they are operating on the basis of their unique strengths, talents, interests, and goals than when they are trying to conform to some imposed stereotype. They are comfortable with a pluralistic culture and tend to be bored with one that is monolithic. As managers, they encourage a team arrangement in which each member works at what he or she does best and enjoys most; as teachers they strive to tailor the learning strategies to fit the individual learning styles, paces, starting points, needs, and interests of all the students. This proposition is widely supported in the research literature (Combs and Snygg, 1959; Csikszentmihalyi, 1975; Erikson, 1964; Goldstein and Blackman, 1978; Gowan et al., 1967; Kagan, 1967; Maslow, 1970; Messick et al., 1976; Moustakas, 1974; Tyler, 1978).

   I would like to add another dimension to this proposition—more of a philosophical note than a behavioral observation. It is that creative leaders probably have a different sense of the

purpose of life from that of the controlling leaders. They see the purpose of all life activities—work, learning, recreation, civic participation, worship—as a way to enable each individual to achieve his or her full and unique potential. They seek to help each person become what Maslow (1970) calls a self-actualizing person, whereas the controlling leader's mission is to produce conforming persons.

5. Creative leaders stimulate and reward creativity. They understand that in a world of accelerating change, creativity is a basic requirement for the survival of individuals, organizations, and societies. They exemplify creativity in their own behavior and provide an environment that encourages and rewards innovation in others. They make it legitimate for people to experiment and to treat failures as opportunities to learn rather than as acts to be punished (Barron, 1963; Bennis, 1966; Cross, 1976; Davis and Scott, 1971; Gardner, 1963; Gowan et al., 1967; Herzberg, 1966; Ingalls, 1976; Kagan, 1967; Schon, 1971; Toffler, 1974; Zahn, 1966).
6. Creative leaders are committed to a process of continuous change and are skillful in managing change. They understand the difference between static and innovative organizations (as illustrated in Table 14-2) and aspire to make their organizations the latter. They are well grounded in the theory of change and skillful in selecting the most effective strategies for bringing about change (Arends and Arends, 1977; Baldridge and Deal, 1975; Bennis, Benne, and Chin, 1968; Goodlad, 1975; Greiner, 1971; Hefferlin, 1969; Hornstein et al., 1971; Lippitt, 1978; Mangham, 1948; Martorana and Kuhns, 1975; Schein and Bennis, 1965; Tedeschi, 1972; Zurcher, 1977).
7. Creative leaders emphasize internal motivators over external motivators. They understand the distinction revealed in Herzberg's (1959) research between satisfiers (motivators), such as achievement, recognition, fulfulling work, responsibility, advancement, and growth, and dissatisfiers (hygienic factors), such as organizational policy and administration, supervision, working conditions, interpersonal relations, salary, status, job security, and personal life. They take steps to minimize the dissatisfiers but concentrate their energy on optimizing the satisfiers. This position is strongly supported

Table 14-2
Some Characteristics of Static vs. Innovative Organizations

DIMENSIONS	CHARACTERISTICS	
	Static Organizations	**Innovative Organizations**
Structure	Rigid—much energy given to maintaining permanent departments, committees; reverance for tradition, constitution, and by-laws.	Flexible—much use of temporary task forces; easy shifting of departmental lines; readiness to change constitution, depart from tradition.
	Hierarchial—adherence to chain of command.	Multiple linkages based on functional collaboration.
	Roles defined narrowly.	Roles defined broadly.
	Property-bound.	Property-mobile.
Atmosphere	Task-centered, impersonal.	People-centered, caring.
	Cold, formal, reserved. Suspicious.	Warm, informal, intimate. Trusting.
Management, Philosophy, and Attitudes	Function of management is to control personnel through coercive power.	Function of management is to release the energy of personnel; power is used supportively.
	Cautious—low risk-taking.	Experimental—high risk-taking.
	Attitude toward errors: to be avoided.	Attitude toward errors: to be learned from
	Emphasis on personnel selection.	Emphasis on personal development.

Table 14-2 Continued

DIMENSIONS	CHARACTERISTICS	
	Static Organizations	**Innovative Organizations**
	Self-sufficiency—closed system regarding sharing resources.	Interdependency—open system regarding sharing resources.
	Low tolerance for ambiguity.	High tolerance for ambiguity.
Decision-making and Policy-making	High participation at top, low at bottom.	Relevant participation by all those affected.
	Clear distinction between policy-making and policy-execution.	Collaborative policy-making and policy-execution.
	Decision-making by legal mechanisms.	Decision-making by problem-solving.
	Decisions treated as final.	Decisions treated as hypotheses to be tested.
Communication	Restricted flow—constipated.	Open flow—easy access.
	One-way—downward.	Multidirectional—up, down, sideways.
	Feelings repressed or hidden.	Feelings expressed.

by subsequent research (Levinson et al., 1963; Likert, 1967; Lippitt, 1969).

8. Creative leaders encourage people to be self-directing. They sense intuitively what researchers have been telling us for some time—that a universal characteristic of the maturation

process is movement from a state of dependency toward states of increasing self-directedness (Baltes, 1984; Erikson, 1950, 1959, 1964; Goulet and Baltes, 1970; Gubrium and Buckholdt, 1977; Havighurst, 1972; Kagan and Moss, 1962; Loevinger, 1976; Rogers, 1961). They realize that because of previous conditioning as dependent learners in their school experience, adults need initial help in learning to be self-directing and will look to leaders for this kind of help (Kidd, 1973; Knowles, 1975, 1978, 1980; Tough, 1967, 1979). And, to provide this kind of help, they have developed their skills as facilitators and consultants to a high level (Bell and Nadler, 1979; Blake and Mouton, 1976; Bullmer, 1975; Carkhuff, 1969; Combs et al., 1978; Laughary and Ripley, 1979; Lippitt and Lippitt, 1978; Pollack, 1976; Schein, 1969; Schlossberg et al., 1978).

No doubt additional propositions and behavioral characteristics could be identified, but these are the ones that stand out in my observation of creative leaders and review of the literature as being most central. And I have seen wonderful things happen when they have been put into practice. I have seen low-achieving students become high-achieving students when they discovered the excitement of self-directed learning under the influence of a creative teacher. I have seen bench workers in a factory increase their productivity and get a new sense of personal pride and fulfillment under a creative supervisor. I have seen an entire college faculty (at Holland College, Prince Edward Island, Canada) become creative facilitators of learning and content resource consultants through the stimulation of a creative administration. And I have observed several instances in which the line managers of major corporations moved from controlling managers to releasing managers when their management-development programs were geared to these propositions.

Perhaps we are on the verge of beginning to understand how to optimize the release of the enormous pent-up energy in our human energy systems.

Reflection Questions

14.1 Discuss and contrast the concepts of controlling and releasing the energy of others.

14.2 Why is leadership important in releasing the energy of others?

14.3 What strikes you most when you compare and contrast static and innovative organizations?

CHAPTER 15

*Some Guidelines for the Use of Learning Contracts**

WHY USE LEARNING CONTRACTS?

One of the most significant findings from research about adult learning (for example, Allen Tough's *The Adult's Learning Projects*) is that when adults go about learning something naturally (as contrasted with being taught something), they are highly self-directing. Evidence is beginning to accumulate, too, that what adults learn on their own initiative, they learn more deeply and permanently than what they learn by being taught.

Those kinds of learning that are engaged in for purely personal development can perhaps be planned and carried out completely by an individual on his or her own terms and with only a loose structure. But those kinds of learning that have as their purpose improving one's competence to perform in a job or in a profession must take into account the needs and expectations of organizations, professions, and society. Learning contracts provide a means for negotiating a reconciliation between these external needs and expectations and the learner's internal needs and interests.

Furthermore, in traditional education the learning activity is structured by the teacher and the institution. The learner is told what objectives to work toward, what resources to use and how (and

*Richard A. Swanson and Sandra K. Falkman (1997). *Human Resource Development Quarterly,* vol. 8, no. 4, Jossey-Bass Publishers.

when) to use them, and how accomplishment of the objectives will be evaluated. This imposed structure conflicts with the adult's deep psychological need to be self-directing and may induce resistance, apathy, or withdrawal. Learning contracts provide a vehicle for making the planning of learning experiences a mutual undertaking between a learner and his or her helper, mentor, teacher, and often, peers. By participating in the process of diagnosing his or her needs, formulating personal objectives, identifying resources, choosing strategies, and evaluating accomplishments, the learner develops a sense of ownership of (and commitment to) the plan.

Finally, in field-based learning particularly, there is a strong possibility that what is to be learned from the experience will be less clear to both the learner and the field supervisor than what work is to be done. There is a long tradition of field experience learners being exploited for the performance of menial tasks. The learning contract is a means for making the learning objectives of the field experience clear and explicit for both the learner and the field supervisor.

HOW DO YOU DEVELOP A LEARNING CONTRACT?

Step 1: Diagnose Your Learning Needs

A learning need is the gap between where you are now and where you want to be in regard to a particular set of competencies.

You may already be aware of certain learning needs as a result of a personnel appraisal process or the long accumulation of evidence for yourself of the gaps between where you are now and where you would like to be.

If not (or even so), it might be worth your while to go through this process: First, construct a model of the competencies required to perform excellently the role (e.g., parent, teacher, civic leader, manager, consumer, professional worker, etc.) about which you are concerned. There may be a competency model already in existence that you can use as a thought-starter and checklist; many professions are developing such models. If not, you can build your own, with help from friends, colleagues, supervisors, and expert resource people. A competency can be thought of as the ability to do something at some level of proficiency; it is usually composed of some combination of

knowledge, understanding, skill, attitude, and values. For example, "ability to ride a bicycle from my home to the store" is a competency that involves some knowledge of how a bicycle operates and the route to the store; an understanding of some of the dangers inherent in riding a bicycle; skill in mounting, pedaling, steering, and stopping a bicycle; an attitude of desire to ride a bicycle; and a valuing of the exercise it will yield. "Ability to ride a bicycle in a cross-country race" would be a higher-level competency that would require greater knowledge, understanding, skill, and so on. It is useful to produce a competency model even if it is crude and subjective because of the clearer sense of direction it will give you.

Having constructed a competency model, your next task is to assess the gap between where you are now and where the model says you should be in regard to each competency. You can do this alone or with the help of people who have been observing your performance. The chances are that you will find that you have already developed some competencies to a level of excellence, so that you can concentrate on those you haven't. An example of a model of competencies for the role of adult educator is provided in Chapter 11.

Step 2: Specify Your Learning Objectives

You are now ready to start filling out the first column of the learning contract shown in Figure 15-1, "Learning Objectives." Each of the learning needs diagnosed in Step 1 should be translated into a learning objective. Be sure that your objectives describe what you will *learn*, not what you will *do*. State them in terms that are most meaningful to you—content acquisition, terminal behaviors, or directions of growth.

Step 3: Specify Learning Resources and Strategies

When you have finished listing your objectives, move over to the second column of the contract in Figure 15-1, "Learning Resources and Strategies," and describe how you propose to go about accomplishing each objective. Identify the resources (material and human) you plan to use in your field experience and the strategies (techniques, tools) you will employ in making use of them. For example, if in the "Learning Objectives" column you wrote, "Improve my ability to organize my work efficiently so that I can accomplish 20

percent more work in a day," you might list the following in the "Learning Resources and Strategies" column:

1. Find books and articles in the library on how to organize my work and manage time.
2. Interview three executives on how they organize their work, then observe them for one day each, noting techniques they use.
3. Select the best techniques from each, plan a day's work, and have a colleague observe me for a day, giving me feedback.

Step 4: Specify Evidence of Accomplishment

After completing the second column, move over to the third column, "Evidence of Accomplishment of Objectives," and describe what evidence you will collect to indicate the degree to which you have achieved each objective. Perhaps the following examples of evidence for different types of objectives will stimulate your thinking about what evidence you might accumulate:

Learning Contract for:

Name _____

Activity _____

Learning Objectives	Learning Resources and Strategies	Evidence of Accomplishment of Objectives	Criteria and Means for Validating Evidence

Figure 15-1. *This is a typical learning contract.*

Type of Objective	Examples of Evidence
Knowledge	Reports of knowledge acquired, as in essays, examinations, oral presentations, audiovisual presentations, annotated bibliographies.
Understanding	Examples of utilizations of knowl edge in solving problems, as in action projects, research projects with conclusions and recommendations, plans for curriculum change, etc.
Skills	Performance exercises, videotaped performances, etc., with ratings by observers.
Attitudes	Attitudinal rating scales; performance in real situations, role-playing, simulation games, critical incident cases, etc., with feedback from participants and/or observers.
Values	Value rating scales; performance in value clarification groups, critical incident cases, simulation exercises, etc., with feedback from participants and/or observers.

Step 5: Specify How the Evidence Will Be Validated

After you have specified what evidence you will gather for each objective in column three, more over to column four, "Criteria and Means for Validating Evidence." For each objective, first specify by what criteria you propose the evidence will be judged. The criteria will vary according to the type of objective. For example, appropriate criteria for knowledge objectives might include comprehensiveness, depth, precision, clarity, authentication, usefulness, and scholarliness. For skill objectives, more appropriate criteria may be poise, speed, flexibility, gracefulness, precision, and imaginativeness. After you have specified the criteria, indicate the means you propose to use to have the evidence judged according to these criteria. For example, if you produce a paper or report, who will you

have read it and what are that person's qualifications? Will the person express his or her judgments by rating scales, descriptive reports, evaluative reports, or how? One of the actions that help to differentiate "distinguished" from "adequate" performance in self-directed learning is the wisdom with which a learner selects his or her validators.

Step 6: Review Your Contract with Consultants

After you have completed the first draft of your contract, you will find it useful to review it with two or three friends, supervisors, or other expert resource people to get their reactions and suggestions. Here are some questions you might have them ask about the contract to get optimal benefit from their help:

1. Are the learning objectives clear, understandable, and realistic; and do they describe what you propose to learn?
2. Can they think of other objectives you might consider?
3. Do the learning strategies and resources seem reasonable, appropriate, and efficient?
4. Can they think of other resources and strategies you might consider?
5. Does the evidence seem relevant to the various objectives, and would it convince them?
6. Can they suggest other evidence you might consider?
7. Are the criteria and means for validating the evidence clear, relevant, and convincing?
8. Can they think of other ways to validate the evidence that you might consider?

Step 7: Carry Out the Contract

You now simply do what the contract calls for. But keep in mind that as you work on it you may find that your notions about what you want to learn and how you want to learn it may change. So don't hesitate to revise your contract as you go along.

Step 8: Evaluate Your Learning

When you have completed your contract, you will want to get some assurance that you have in fact learned what you set out to learn. Perhaps the simplest way to do this is to ask the consultants you used in Step 6 to examine your evidence and validation data and give you their judgment about their adequacy.

Reflection Questions

15.1 What are the steps in creating a learning contract?

15.2 What learning contract step or steps do you think give learners the most difficulty?

CHAPTER 16

*Core Competency Diagnostic and Planning Guide**

Self-Diagnostic Rating Scale Competencies for the Role of Adult Educator/Trainer*

Name_____

Program_____

Indicate on the six-point scale below the level of each competency required for performing the particular role you plan to engage in by placing an "R" at the appropriate point. Then indicate your present level of development of each competency by placing a "P" at the appropriate point. For example, if you plan to make your career in teaching, you might rate required competencies as a learning facilitator as high and as a program developer and administrator as low or moderate; whereas, if you plan a career as a college administrator, you might rate the competencies as a learning facilitator as moderate and as a program developer and administrator as high. (Blanks have been provided at the end of each section for the learners to add competencies of their own.)

**Malcolm S. Knowles, 1981. Permission to use this rating scale is granted without limitation.*

As a Learning Facilitator

A. Conceptual and Theoretical Framework of Adult Learning:

1. Ability to describe and apply modern concepts and research findings regarding the needs, interests, motivations, capacities, and developmental characteristics of adults as learners. 0 1 2 3 4 5
2. Ability to describe the differences in assumptions about youths and adults as learners and the implications of these differences for teaching. 0 1 2 3 4 5
3. Ability to assess the effects of forces impinging on learners from the larger environment (groups, organizations, cultures) and manipulate them constructively. 0 1 2 3 4 5
4. Ability to describe the various theories of learning and assess their relevance to particular adult learning situations. 0 1 2 3 4 5
5. Ability to conceptualize and explain the role of teacher as a facilitator and resource person for self-directed learners. 0 1 2 3 4 5

B. Designing and Implementing Learning Experiences:

1. Ability to describe the difference between a content plan and a process design. 0 1 2 3 4 5
2. Ability to design learning experiences for accomplishing a variety of purposes that take into account individual differences among learners. 0 1 2 3 4 5
3. Ability to engineer a physical and psychological climate of mutual respect, trust, openness, supportiveness, and safety. 0 1 2 3 4 5
4. Ability to establish a warm, empathic, facilitative relationship with learners of all sorts. 0 1 2 3 4 5
5. Ability to engage learners responsibly in self-diagnosis of needs for learning. 0 1 2 3 4 5
6. Ability to engage learners in formulation objectives that are meaningful to them. 0 1 2 3 4 5
7. Ability to involve learners in the planning, conducting, and evaluating of learning activities appropriately. 0 1 2 3 4 5

C. Helping Learners Become Self-Directing:

1. Ability to explain the conceptual difference between didactic instruction and self-directed learning. 0 1 2 3 4 5
2. Ability to design and conduct one-hour, three-hour, one-day, and three-day learning experiences to develop the skills of self-directed learning. 0 1 2 3 4 5
3. Ability to model the role of self-directed learning in your own behavior. 0 1 2 3 4 5

D. Selecting Methods, Techniques, and Materials:

1. Ability to describe the range of methods or formats for organizing learning experiences. 0 1 2 3 4 5
2. Ability to describe the range of techniques available for facilitating learning. 0 1 2 3 4 5
3. Ability to identify the range of materials available as resources for learning. 0 1 2 3 4 5

4. Ability to provide a rationale for selecting a particular method, technique, or material for achieving particular educational objectives.	0	1	2	3	4	5
5. Ability to evaluate various methods, techniques, and materials as to their effectiveness in achieving particular educational outcomes.	0	1	2	3	4	5
6. Ability to develop and manage procedures for the construction of models of competency.	0	1	2	3	4	5
7. Ability to construct and use tools and procedures for assessing competency-development needs.	0	1	2	3	4	5
8. Ability to use a wide variety of presentation methods effectively.	0	1	2	3	4	5
9. Ability to use a wide variety of experiential and simulation methods effectively.	0	1	2	3	4	5
10. Ability to use audience-participation methods effectively.	0	1	2	3	4	5
11. Ability to use group dynamics and small-group discussion techniques effectively.	0	1	2	3	4	5
12. Ability to invent new techniques to fit new situations.	0	1	2	3	4	5

13. Ability to evaluate learning outcomes and processes and select or construct appropriate instruments and procedures for this purpose. 0 1 2 3 4 5

14. Ability to confront new situations with confidence and a high tolerance for ambiguity. 0 1 2 3 4 5

As a Program Developer

A. Understanding the Planning Process:

1. Ability to describe and implement the basic steps (e.g., climate setting, needs assessment, formulation of program objectives, program design, program execution, and evaluation) that undergird the planning process in adult education. 0 1 2 3 4 5

2. Ability to involve representatives of client systems appropriately in the planning process. 0 1 2 3 4 5

3. Ability to develop and use instruments and procedures for assessing the needs of individuals, organizations, and subpopulations in social systems. 0 1 2 3 4 5

4. Ability to use systems-analysis strategies in program planning. 0 1 2 3 4 5

B. Designing and Operating Programs:

1. Ability to construct a wide variety of program designs to meet the needs of various situations (basic skills training, developmental education, supervisory and management development, organizational development, etc.). 0 1 2 3 4 5
2. Ability to design programs with a creative variety of formats, activities, schedules, resources, and evaluative procedures. 0 1 2 3 4 5
3. Ability to use needs assessments, census data, organizational records, surveys, etc., in adapting programs to specific needs and clienteles. 0 1 2 3 4 5
4. Ability to use planning mechanisms, such as advisory councils, committees, task forces, etc., effectively. 0 1 2 3 4 5

5. Ability to develop and carry out a plan for program evaluation that will satisfy the requirements of institutional accountability and provide for program improvement. 0 1 2 3 4 5

As an Administrator

A. Understanding Organizational Development and Maintenance:

1. Ability to describe and apply theories and research findings about organizational behavior, management, and renewal. 0 1 2 3 4 5
2. Ability to formulate a personal philosophy of administration and adapt it to various organizational situations. 0 1 2 3 4 5
3. Ability to formulate policies that clearly convey the definition of mission, social philosophy, educational commitment, etc., of an organization. 0 1 2 3 4 5
4. Ability to evaluate organizational effectiveness and guide its continuous self-renewal processes. 0 1 2 3 4 5

5. Ability to plan effectively with and through others, sharing responsibilities and decision making with them as appropriate.

0 1 2 3 4 5

6. Ability to select, supervise, and provide for in-service education of personnel.

0 1 2 3 4 5

7. Ability to evaluate staff performance.

0 1 2 3 4 5

8. Ability to analyze and interpret legislation affecting adult education.

0 1 2 3 4 5

9. Ability to describe financial policies and practices in the field of adult education and to use them as guidelines for setting your own policies and practices.

0 1 2 3 4 5

10. Ability to perform the role of change agent vis-a-vis organizations and communities utilizing educational processes.

0 1 2 3 4 5

B. Understanding Program Administration:

1. Ability to design and operate programs within the framework of a limited budget.

0 1 2 3 4 5

2. Ability to make and monitor financial plans and procedures.	0 1 2 3 4 5
3. Ability to interpret modern approaches to adult education and training to policy-makers convincingly.	0 1 2 3 4 5
4. Ability to design and use promotion, publicity, and public relations strategies appropriately and effectively.	0 1 2 3 4 5
5. Ability to prepare grant proposals and identify potential funding sources for them.	0 1 2 3 4 5
6. Ability to make use of consultants appropriately.	0 1 2 3 4 5
7. Ability and willingness to experiment with programmatic innovations and assess their results objectively.	0 1 2 3 4 5

Reflection Questions

16.1 Taking the self-diagnostic, what is your greatest strength and how could you use this to your advantage?

16.2 Taking the self-diagnostic, what is your greatest weakness and how could you go about improving your competence in this realm?

CHAPTER 17

Personal Adult Learning Style Inventory

Developed by Dr. Malcolm S. Knowles

This inventory is for anyone involved in organizing and administering adult learning activities. You might be a trainer, teacher, group facilitator, administrator, educator, or anyone who works with adults in teaching/learning relationships. Your responses to this inventory will give you some insight into your general orientation to adult learning, program development, learning methods, and program administration.

Self-assessments are not easy for anyone to make accurately. How we would like to be seen by others comes in conflict with how we really behave. Our vision of ourselves is likely to be somewhat optimistic. Please be as candid as possible in your responses so that you can obtain a better understanding of your HRD style.

Directions: Thirty pairs of items are listed on the next seven pages. The statements comprising each pair are labeled A and B. After reading each pair and considering your own approach, decide on the extent to which you agree with *each* statement. Place your response on the scale in the center of the page by circling *one* of the choices.

This inventory is designed to be used in a variety of settings; therefore, the words *facilitator* and *trainer* may be used interchangeably, as well as *learning* and *training*. Both words are included in the inventory and denoted with a slashmark ("/").

Use the following key:

A	=	I agree fully with statement A
A>B	=	I agree more with statement A than B
NANB	=	I do not agree with either statement A or B
B>A	=	I agree more with statement B than A
B	=	I agree fully with statement B

Go to the Next Page....

Note: Permission is granted to use this inventory without limitation.

Personal Adult Learning Style Inventory
Developed by Dr. Malcom S. Knowles

	A	A	A>B	NANB	B>A	B	B
1	There are a number of important differences between youths and adults as learners that can affect the learning process.	A	A>B	NANB	B>A	B	For the most part adults and youths do not differ greatly in terms of the learning process.
2	Effective learning/training design puts equal weight on content and process plans.	A	A>B	NANB	B>A	B	Effective learning/training design is concerned with content first and process second.
3	Effective facilitators/trainers model self-directed learning in their own behavior, both within and outside the learning session.	A	A>B	NANB	B>A	B	Effective facilitators/trainers show learners that they, the facilitators/trainers, are content experts, with the knowledge and skills to be "in the driver's seat."
4	Effective learning/training is based on sound methods for involving learners in assessing their own learning needs.	A	A>B	NANB	B>A	B	Effective learning/training rests on the trainer's use of standard, valid methods for assessing learners' needs.
5	Client system representatives must be involved in the	A	A>B	NANB	B>A	B	It is the program developer's responsibility to provide clients

	planning of learning/training programs						with clear and detailed plans.
6	Program administrators must plan, work and share decision-making with client system members.	A	A>B	NANB	B>A	B	Program administrators must have full responsibility and be held accountable for their plans and decisions.
7	The role of the facilitator/ trainer is best seen as that of a facilitator and resource person for self-directed learners.	A	A>B	NANB	B>A	B	The role of the facilitator/ trainer is to provide the most current and accurate information possible for learners.
8	Effective learning designs take into account individual differences among learners.	A	A>B	NANB	B>A	B	Effective learning designs are those that apply broadly to most or all learners.
9	Effective facilitators/trainers are able to create a variety of learning experiences for helping trainees develop self-directed learning skills.	A	A>B	NANB	B>A	B	Effective facilitators/trainers concentrate on preparing learning /training sessions that effectively convey specific content.
10	Successful learning/training designs incorporate a variety of experiential learning methods.	A	A>B	NANB	B>A	B	Successful learning/training designs are grounded in carefully developed formal presentations.

(Continued on next page)

Personal Adult Learning Style Inventory (Continued)
Developed by Dr. Malcom S. Knowles

	A	A	A>B	NANB	B>A	B	B
11	Client system members should be involved in developing needs assessment instruments and procedures that provide the data for program planning.	A	A>B	NANB	B>A	B	Learning/training program developers are responsible for designing and using sound needs assessment instruments and procedures to generate valid data for program planning.
12	Program administrators must involve their clients in defining, modifying and applying financial policies and practices related to learning/training programs.	A	A>B	NANB	B>A	B	Program administrators must be able to explain clearly to their clients their financial policies and practices related to learning/ training programs.
13	Effective facilitators/trainers must take into account recent research findings concerning the unique characteristics of adults as learners.	A	A>B	NANB	B>A	B	Effective facilitators/trainers must use the respected, traditional learning theories as they apply to *all* learners.
14	Effective learning requires a physical and psychological climate of mutual respect,	A	A>B	NANB	B>A	B	Effective learning depends on learners recognizing and relying on the expert knowledge and

	trust, openness, support-iveness and security.						skills of the trainer.
15	It is important to help learners understand the differences between didactic instruction and self-directed learning.	A	A>B	NANB	B>A	B	Learners should concentrate on the content of learning/training rather than the method or methods of instruction.
16	Effective facilitators/trainers are able to get learners involved in the learning/ training.	A	A>B	NANB	B>A	B	Effective facilitators/trainers are able to get, focus and maintain the learners' attention.
17	Client system representatives need to be involved in revising and adapting learning/training programs, based on continuing needs assessment.	A	A>B	NANB	B>A	B	Learning/training program developers must develop and use on-going needs assessment data, to revise nd adapt programs to better a meet client needs.
18	Program administrators must involve organizational decision-makers in interpreting and applying modern approaches to adult education and learning/training.	A	A>B	NANB	B>A	B	Program administrators must be able to explain clearly and convincingly modern approaches to adult education and learning /training to organizational policy makers.

(Continued on next page)

Personal Adult Learning Style Inventory (Continued)
Developed by Dr. Malcom S. Knowles

	A	A	A>B	NANB	B>A	B	B
19	Effective learning requires the facilitator/trainer to assess and control the effects that factors such as groups, organizations and cultures have on learners.	A	A>B	NANB	B>A	B	Effective learning requires the facilitator/trainer to isolate learners from the possible effects of outside factors such as groups, organizations or cultures.
20	Effective learning/training design engages the learners in a responsible self-diagnosis of their learning needs.	A	A>B	NANB	B>A	B	Effective learning/training can take place only after experts have diagnosed the real learning needs of learners.
21	Effective facilitators/trainers involve learners in planning, implementing and evaluating their own learning activities.	A	A>B	NANB	B>A	B	Effective facilitators/trainers accept responsibility for the planning, implementation and evaluation of the learning activities they direct.
22	Use of group dynamics principles and small group discussion techniques is critical for effective learning.	A	A>B	NANB	B>A	B	Effective learning centers on the one-to-one relationship between the facilitator/trainer and the learner.
23	Program developers must help design and use program planning mechanisms such as client system advisory	A	A>B	NANB	B>A	B	Effective program planning is the result of the program developer's efforts to interpret and to use the client system data they collect.

	committees, task forces and others.						
24	Program administrators must collaborate with organizational members to experiment with program innovations, jointly assessing outcomes and effectiveness.	A	A>B	NANB	B>A	B	Program administrators must take the initiative to experiment with program innovations and assess their outcomes and effectiveness.
25	In preparing a learning/ training activity, the facilitator/trainer should review those theories of learning relevant for particular adult learning situations.	A	A>B	NANB	B>A	B	In preparing a learning/training activity, the facilitator/trainer should rely on certain basic assumptions about the learning process that have been proven to be generally true.
26	Effective learning/training engages learners in formulating objectives that are meaningful to them.	A	A>B	NANB	B>A	B	Effective learning/training requires that the facilitator/trainer clearly define the goals that learners are expected to attain.
27	Effective facilitators/trainers begin the learning process by engaging adult learners in self-diagnosis of their own learning needs.	A	A>B	NANB	B>A	B	Effective facilitators/trainers start by making a careful diagnosis of participant learning needs.

(Continued on next page)

Personal Adult Learning Style Inventory (Continued)
Developed by Dr. Malcom S. Knowles

	A	A	A>B	NANB	B>A	B	B
28	Learners must be involved in planning and developing evaluation instruments and procedures and in carrying out the evaluation of learning processes and outcomes.	A	A>B	NANB	B>A	B	Facilitators/trainers are responsible for planning and developing evaluation instruments and procedures and for carrying out evaluation of learning processes and outcomes.
29	Program developers must involve client system members in designing and using learning /training program evaluation plans.	A	A>B	NANB	B>A	B	Program developers are responsible for designing and implementing sound evaluation plans.
30	Program administrators must work with organizational members and decision makers to analyze and interpret legislation affecting organizational learning/training programs.	A	A>B	NANB	B>A	B	Program administrators are responsible for making and presenting to organizational authorities analyses of legislation that affects organizational learning/ training programs.

SCORING THE INVENTORY

Directions: Circle the numbers in each column that correspond to the answers you chose on the survey (see key below) and then add down the columns. Enter the sum for each column in the box provided. You will have six scores (Subtotals). Then, add the Subtotals and place the sum in the Total box at the bottom.

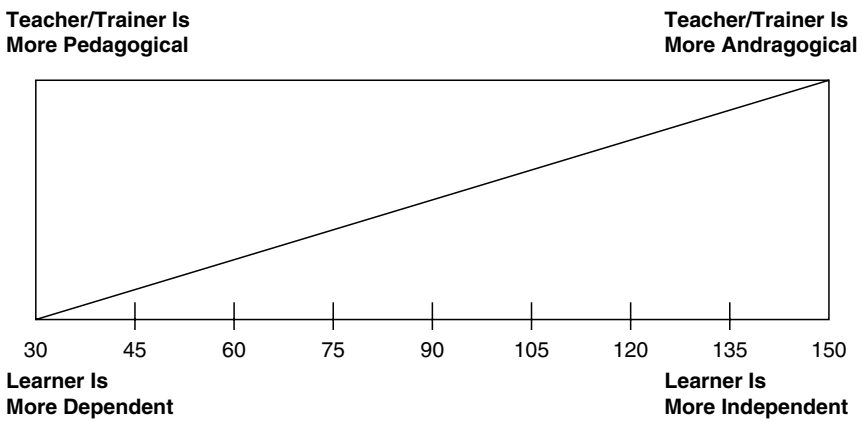
A = 5
A>B = 4
NANB = 3
B>A = 2
B = 1

I. Learning Orientation	II. Learning Design	III. How People Learn	IV. Learning Methods	V. Program Development	VI. Program Admin.
1	6	11	16	21	26
5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1
2	7	12	17	22	27
5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1
3	8	13	18	21	28
5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1
4	9	14	19	24	29
5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1
5	10	15	20	25	30
5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1
				TOTAL	

Graphing Your Results

To bring your results into sharper focus regarding your Andragogic or Pedagogic orientation, plot your results on the following graphs. Plot your Total score on the Pedagogy/Andragogy continuum below by placing an X at the appropriate point. Scores of 120-150 would suggest a stronger andragogical orientation. Scores of 60-30 would suggest a stronger pedagogical orientation.

Overall Results: *How Andragogic Am I*



Component Results: *To what extent am I andragogical in each of the six areas:*

	Pedagogically Oriented	My Scores	Andragogically Oriented
I	5-10		20-25
II	5-10		20-25
III	5-10		20-25
IV	5-10		20-25
V	5-10		20-25
VI	5-10		20-25

Place each of your six component scores in the column labeled, "My Scores." Compare your score for each component to the pedagogy/andragogy ranges.

Interpretive Guide

The *Personal HRD Style Inventory* is a learning instrument designed to help you assess the assumptions that underlie your teaching/training activities. These assumptions may be useful or not useful, depending on the particular learner and the particular learning situation.

Teaching/learning assumptions may be categorized as *pedagogically* oriented or *andragogically* oriented. The body of theory and practice on which teacher-directed learning is based is often given the label "pedagogy," from the Greek words *paid* (meaning child) and *agogos* (meaning guide or leader)—thus being defined as the art and science of teaching children.

The body of theory and practice on which self-directed learning is based is coming to be labeled *andragogy*, from the Greek word *aner* (meaning "adult")—thus being defined as the art and science of helping adults (or, even better, maturing human beings) learn.

Traditional Learning: The Pedagogical Model

The pedagogical model is the one with which all of us have had the most experience. Teaching in our elementary schools, high schools, colleges, the military service, churches, and a variety of other institutions is largely pedagogically oriented. When we are asked to serve as instructors or prepare instruction for others, the pedagogical model comes quickly to mind and often takes control of our activities. That is easy to understand since pedagogy has dominated education and training practices since the seventh century.

Five assumptions about learners are inherent in the pedagogical model:

1. The learner is a dependent personality. The teacher/trainer is expected to take full responsibility for making the decisions about what is to be learned, how and when it should be learned, and whether it has been learned. The role of the learner is to carry out the teacher's directions passively.
2. The learner enters into an educational activity with little experience that can be used in the learning process. The experience of the teacher/trainer is what is important. For that reason a

variety of one-way communication strategies are employed, including lectures, textbooks and manuals, and a variety of audiovisual techniques that can transmit information to the learner efficiently.

3. People are ready to learn when they are told what they have to learn in order to advance to the next grade level or achieve the next salary grade or job level.
4. People are motivated to learn primarily by external pressures from parents, teachers/trainers, employers, the consequences of failure, grades, certificates, and so on.

CONTEMPORARY LEARNING: THE ANDRAGOGICAL MODEL

During the 1960s, European adult educators coined the term *andragogy* to provide a label for a growing body of knowledge and technology in regard to adult learning. The following five assumptions underlie the andragogical model of learning:

1. The learner is self-directing. Adult learners want to take responsibility for their own lives, including the planning, implementing, and evaluating of their learning activities.
2. The learner enters an educational situation with a great deal of experience. This experience can be a valuable resource to the learner as well as to others. It needs to be valued and used in the learning process.
3. Adults are ready to learn when they perceive a need to know or do something in order to perform more effectively in some aspect of their lives. Their readiness to learn may be stimulated by helping them to assess the gaps between where they are now and where they want and need to be.
4. Adults are motivated to learn after they experience a need in their life situation. For that reason, learning needs to be problem-focused or task-centered. Adults want to apply what they have learned as quickly as possible. Learning activities need to be clearly relevant to the needs of the adult.
5. Adults are motivated to learn because of internal factors, such as self-esteem, recognition, better quality of life, greater

self-confidence, the opportunity to self-actualize, and so forth. External factors, such as pressure from authority figures, salary increases, and the like, are less important.

Implications of the Models for Teacher/Trainers

A subscription to one model of learning or the other carries with it certain implications for the teacher/trainer. The basic concern of people with a pedagogical orientation is *content*. Teachers and trainers with a strong pedagogical orientation will be strongly concerned about what needs to be covered in the learning situation; how that content can be organized into manageable units; the most logical sequence for presenting these units; and the most efficient means of transmitting this content.

In contrast, the basic concern of people with an andragogical orientation is *process*. The andragogical process consists of eight elements: preparing the learners, considering the physical and psychological climate setting, involving the learners in planning for their learning, involving the learners in diagnosing their own needs for learning, involving the learners in formulating their own learning objectives, involving the learners in designing learning plans, helping the learners carry out their learning plans, and involving the learners in evaluating their own learning outcomes.

Reflection Questions

17.1 Taking the style inventory, how consistent are your results with what you imagined your style to be?

17.2 How would you like your style to grow and change in the future?

CHAPTER 18

*Training Delivery Problems and Solutions**

The authors surveyed 371 trainers who were asked to recall training delivery problems or difficulties they experienced as novices. The analysis of their 1,098 responses conclude that novice trainers faced 12 common training delivery problems. Twenty expert trainers were subsequently surveyed and asked to present successful strategies for dealing with the 12 training delivery problems. The analysis of their responses concludes with a synthesis of the common training delivery problems experienced by novices and the experts' advice on how to solve these problems.

The training of employees at all levels has taken on a significant role in industry and business. Rapid technological advances in the workplace and the corporation's concern for profit in today's marketplace drive the emphasis on training employees. When properly used, training increases both the effectiveness and efficiency of employees (Swanson, 1992). Within this framework and with all the advances in instructional technology, instructor-led training still remains the most popular method of delivering training, year after year, according to Lakewood Research's annual census.

Most beginning trainers are not graduates of programs specifically designed to train trainers. They are generally subject-matter experts

*Richard A. Swanson and Sandra K. Falkman (1997). *Human Resource Development Quarterly,* vol. 8, no. 4, Jossey-Bass Publishers.

in their organizations and have good communication skills. Their preparation to deliver training often follows a "see and do" model. That is, they observe the course in preparation to deliver it and then they teach the course to other employees in a manner similar to what they observed.

Criticism of the training profession has included the lack of research about the processes used to select instructors, the evaluation methods used to rate the instruction, and the evaluation methods used to rate the instructor (Swanson, 1982). As training in industry and business continues to increase, the body of knowledge possessed by expert professional trainers will need to be captured and shared with more employees in organizations (Jacobs, 1992).

Purpose of the Study

Little has been written about the ways in which expert trainers handle specific training delivery problems in the training classroom. Proven and practical techniques for dealing with specific training delivery problems would help novice trainers.

There were three purposes for this research: (1) to determine the difficulties novice trainers experience during the delivery of training, (2) to gather reports from experts on how they handle such situations, and (3) to synthesize this information into a useful aid that defines the training delivery problems and provides specific solutions.

Overview of the Literature

Training and development has grown dramatically during the past three decades. It has become a $30 billion profession. Each year, 15 million employees participate in 17.6 million courses. One out of every eight American workers attends a formal training course every year (Chakiris and Rolander, 1986). Furthermore, more employees each year are finding themselves in the role of trainer without having adequate preparation.

The burden for understanding and mediating the organization's desire for expertise and meeting the learners' needs is ultimately left on the trainer's shoulders (Yelon, 1992). The research on training adults in the workplace typically focuses on the needs of the organization (Sleezer, 1992) and the learner (Knowles, 1984a). Much less is known and said about the specific problems facing the novice

trainers and their role in delivering instruction. Instructor skills are the skills needed by a trainer when using structured learning events, such as group discussions, presentations, role-plays, and case studies. These skills also include assessing learners' needs, using media and materials, administering exams or instruments, and providing feedback to participants (McLagan, 1983).

General models of training and learning are important to the profession, as are the problems that threaten and discourage practitioners. At the general level, Knowles (1984a) suggested that four concepts can be used to think about adult education: (1) the self-concept of the learner, (2) the learner's experience, (3) the learner's readiness to learn, and (4) the learner's perspective of time. Smith's (1983a, 1983b) more specific review and synthesis of the instruction literature identifies those variables that affect training and that the trainer can control. They include objectives, content structure, instructional sequence, rate of delivery, repetition and practice, knowledge of results, and reinforcement and rewards.

Furthermore, the selection of instructional approaches depends on many criteria, such as conditions of learning, content, and characteristics of the students. Gagne (1987) specifically cites eight variables: gain attention, inform the learner of the learning objectives, stimulate the recall of prerequisite learning, provide learning guidance, elicit performance, provide feedback about performance correctness, assess performance, and enhance performance and transfer.

Zemke and Zemke (1988) have further defined the specific needs of adult learners. The following are some examples: (1) in a classroom training situation, it its important that the environment be comfortable, both physically and psychologically; (2) trainers must understand the participants' expectations of the course, because the self-concepts of the participants are involved, and (3) by serving as a facilitator or orchestrator, the effective instructor can manage the classroom by allowing participants to share their experiences and knowledge, can integrate new knowledge, and can provide strategies that will allow transfer of learning back to the job.

Clearly, the job of instructor is complex. And, while general instruction theories abound, the bulk of the practitioner training delivery advice in the literature is not grounded in research (see Pike, 1989). From the literature it is difficult to cull out the common training delivery problems and expert solutions to those problems being faced by novice trainers.

Methodology

The general methodology of the study involved surveying novice trainers and expert trainers. The novice identified their training delivery problems and the experts provided solutions to those problems. An overview of the general research methodology for this study is:

1. Survey trainers to determine the most frequent training delivery problems that novice trainers experience.
2. Analyze survey data and synthesize results into 10 to 15 major delivery problems.
3. Identify experts to respond to major training delivery problems experienced by novice trainers.
4. Survey the training experts through a questionnaire as to how they handle the identified training delivery problems.
6. Prepare job aids, listing the training delivery problems, general solutions, and specific solutions.
7. Prepare the final report.

Survey of Novice Trainers

A questionnaire was developed to determine the training delivery problems most frequently encountered by novice trainers. Questions covered basic demographic information and problems the respondents encountered during their first two years on the job. The following open-ended question was used:

> As a beginning trainer, what problems or difficulties did you encounter during the delivery phase (or presentation) of training. Please be specific and feel free to use the other side of this questionnaire.

The first draft survey questionnaire was pilot-tested with 25 students in a University of Minnesota graduate-level training class and then revised. The final questionnaire was then sent to the 984 members of the Southern Minnesota Chapter of the American Society for Training and Development. Of the 984 forms that were mailed, 420

(43%) were returned. Some of the returned forms were unusable for various reasons (e.g., blank, problems not listed, returned too late). The 371 (38%) usable questionnaires provide the data for the analysis. A list of 1,098 training delivery problems was derived from the 371 usable questionnaires.

Each of the 1,098 training delivery problems was printed on a note card and sorted into categories. The method used for sorting the data is known as the KJ Method: Affinity Diagrams (Mizuno, 1988). This method, developed by Kawakita Jiro of the Kawakita Research Institute, is used to analyze data that are elusive, confusing, and disorganized. Groupings are made by mutual affinity of the data. The process has seven steps: (1) choose a theme, (2) collect the data, (3) put data onto cards, (4) sort the cards into categories, (5) label the cards, (6) draw the diagrams, and (7) present the data.

Essentially, the technique is a right-brain process (Mizuno, 1988). Those involved in the sorting were directed to use their intuition and creativity to interpret and group the data, as opposed to sorting by rigid analysis and reasoning rules. Nine people were involved in the sorting process: two university professors, six graduate students, and one professional trainer. The four sorting teams worked in three pairs and one triad. Each expert team, A through D, was given one-fourth of the cards. In their A, B, C, and D teams the cards were read slowly, once or twice. Cards that contained similar ideas were grouped together on the basis of their affinity or commonality. After the cards had been grouped, the groups were labeled. The label consisted of words written on a blank card that conveyed the meaning of the cards in that group. The labeled groups of cards are then treated as a single card (Mizuno, 1988).

The 12 training delivery problems fell into three basic categories: (1) those pertaining to the trainer, (2) those describing how the trainer relates to the trainees, and (3) those pertaining to presentation techniques.

SELECTION OF EXPERTS

A variety of distinctions can be drawn between novices and experts. The major differences are intellect and experience. Because experts have a broader knowledge base than novices, they solve problems in a different manner. Experts have more focus, recognize cues that

allow them to recall "chunks" of information, and are better able to integrate and interconnect knowledge. The knowledge that novices possess may be descriptive at a superficial level. In contrast, experts are able to troubleshoot and make interpretations about information. By using cues to access the stored knowledge they possess, experts are able to assess their situation at hand and device an action plan that will work effectively (Thomas, 1988).

The goal of this aspect of the project was to establish a list of such experts in the field of training, specifically those who had distinguished themselves through their outstanding delivery skills. Once identified, these experts were presented with a list of the 12 most common training delivery problems faced by novice trainers as identified through the first survey. The experts were asked to respond to the problems with specific techniques they use to overcome similar problems during training presentations.

The potential experts were to be practitioners having a minimum of two years of experience and recognition by either colleagues or academicians as successfully trainers. A nomination form was sent to the eight officers of the Southern Minnesota Chapter of the American Society for Training and Development to obtain names of experts. The 12-member Training and Development Faculty at the University of Minnesota were also asked to nominate experts. Both groups were sent an identical form on which they were requested to nominate up to six people whom they considered to be expert "deliverers" of training. They were asked to provide the company name, address, and telephone number of the nominees. Three association officers responded and provided 15 names. The survey of the university faculty produced six responses and 28 names. The total of 43 names was reduced to 36, because of duplication.

Survey of Experts

Questionnaires were sent to the 36 people who were identified as experts in delivering training. They were asked to respond to the 12 training delivery problems that had been identified as problems for novice trainers in terms of how they handle these problems.

Twenty (56%) surveys were returned. Most of the experts responded in detail to all of the questions. These responses were typed and sorted into categories. Similar responses were grouped

using the KJ Method. The three or four solutions that appeared most frequently for each difficult training situation became the basis for the final list of solutions from the experts.

ANALYSIS OF DATA

The primary data analysis revolved around the 1,089 training delivery problems of novice trainers collected through the survey questionnaire. A composite list of 12 to 15 general training delivery problems had been compiled when the four teams of experts had finished sorting their portion of the problems according to the KJ Method. Enroute, each team wrote its list on a chalkboard, explained the problems to the other teams, and defended the rationales behind the problems. A matrix was developed to synthesize the topics into 12 training delivery problems.

The final list that emerged contained the summaries of the training-delivery-problem information collected by the first survey. The purpose of the first survey was to determine the major delivery problems of beginning trainers. The synthesis of this analysis resulted in the "Twelve Most Common Training Delivery Problems of Novice Trainers."

The purpose of the second survey was to have experts propose solutions for handling these problems. It resulted in the "Expert Solutions to the Twelve Most Common Delivery Problems of Beginning Trainers." Essentially, it is a topical outline that synthesizes the solutions from the 20 experts against the 12 training delivery problems that novices experience. The combined data from the two surveys are presented here.

1. **FEAR**
   - A. *Be well prepared*. Expert trainers have a detailed lesson plan, understand the material, and practice their presentation.
   - B. *Use ice-breakers*. Experts use ice-breakers and begin with an activity that relaxes participants and gets them to talk and become involved.
   - C. *Acknowledge the fear*. Experts understand that fear is normal, confront what makes them afraid, and use positive self-talk or relaxation exercises prior to the presentation.

2. **CREDIBILITY**
   A. *Don't apologize*. Experts are honest about the subject matter and explain that they are either experts or conduits.
   B. *Have an attitude of an expert*. Experts are well prepared and well organized. They listen, observe, and apply what they know to what the participants know.
   C. *Share personal background*. Experts talk about their areas of expertise and the variety of experiences they have had.

3. **PERSONAL EXPERIENCES**
   A. *Report personal experiences*. Experts tell their personal experiences, sometimes asking themselves problem questions to uncover them.
   B. *Report experiences of others*. Experts collect pertinent stories and incidents from other people and/or have participants share their experiences.
   C. *Use analogies, movies, or famous people*. Experts use familiar incidents or situations in order to relate to the subject.

4. **DIFFICULT LEARNERS**
   A. *Confront problem learner*. Experts use humor. They may also talk to the individual during a break to determine the problem or to ask the person to leave.
   B. *Circumvent dominating behavior*. Experts use nonverbal behavior, such as breaking eye contact or standing with their backs to the person and inviting the others to participate.
   C. *Small groups for timid behavior*. Experts find that quiet people feel more comfortable talking in small groups or dyads. They structure exercises where a wide range of participation is encouraged.

5. **PARTICIPATION**
   A. *Ask open-ended questions*. Experts incorporate questions into the lesson plans and provide positive feedback when people do participate.

B. *Plan small group activities*. Experts use dyads, case studies, and role-plays to allow people to feel comfortable, to reduce fears, and to increase participation.

C. *Invite participation*. Experts structure activities that allow people to share at an early time in the presentation.

6. **TIMING**

A. *Plan well*. Experts plan for too much material, and some parts of the material are expendable. They prioritize activities so that parts may be deleted, if necessary.

B. *Practice, practice, practice*. Experts practice the material many times so they know where they should be at 15-minute intervals. They make sure there's a clock in the training room.

7. **ADJUST INSTRUCTION**

A. *Know group needs*. Experts determine the needs of the group at an early time in the training and structure activities and processes based on those needs.

B. *Request feedback*. Experts watch for signs of boredom and ask participants either during breaks or periodically during the session how they feel about the training.

C. *Redesign during breaks*. Experts find it helpful to have contingency plans and, if necessary, to redesign the program during a break. Redesigning during delivery is not advocated.

8. **QUESTIONS**

Answering Questions

A. *Anticipate questions*. Experts prepare by putting themselves in the participant's place and by writing out key questions learners might have.

B. *Paraphrase learners' questions*. Experts repeat and paraphrase participants' questions to ensure that everyone has heard the question and understands them.

C. "*I don't know*" *is okay*. Experts redirect questions they can't answer back to the group's expertise. They try to locate answers during breaks.

Asking Questions

A. *Ask concise questions*. Questions are a great tool for experts. They ask concise, simple questions and provide enough time for participants to answer.

9. FEEDBACK

A. *Solicit informal feedback*. Experts ask participants, either during class or at the break, if the training is meeting their needs and expectations. They also watch for nonverbal cues.

B. *Do summative evaluations*. Experts have participants fill out forms at the conclusion of training to determine if the objectives and needs of the group were met.

10. MEDIA, MATERIALS, FACILITIES

Media

A. *Know equipment*. Experts know how to fully operate every piece of equipment that they use.

B. *Have back-ups*. Experts carry a survival kit of extra bulbs, extension cords, markers, tape, etc. They also bring the information they are presenting in another medium.

C. *Enlist assistance*. Experts are honest with the group if there is a breakdown and ask if anyone can be of assistance.

Material

A. *Be prepared*. Experts have all materials ready and placed at each participant's workplace or stacked for distribution.

Facilities

A. *Visit facility beforehand*. Experts visit a new facility ahead of time, if possible, to see the layout of the room and to get an idea of where things are located and how to set up.

B. *Arrive early*. Experts arrive at least one hour in advance to ensure enough time for setting up and handling problems.

11. **OPENINGS AND CLOSINGS**

Openings

A. *Develop an "openings file."* Experts rely on the many sources for ice-breaker ideas. Through observation and experimentation, they develop ideas and keep a file of them.

B. *Memorize*. Experts develop a great opening and memorize it.

C. *Relax trainees*. Experts greet people as they enter, take time for introductions, and create a relaxed atmosphere.

Closings

A. *Summarize concisely*. Experts simply and concisely summarize the contents of the course, using objectives or the initial model.

B. *Thank participants*. Experts thank participants for their time and their contributions to the course.

12. **DEPENDENCE ON NOTES**

A. *Notes are necessary*. Experts recognize that no one completely outgrows the need for notes.

B. *Use cards*. Experts scale down their presentations to an outline or key words, which they write on note cards to use as prompts.

C. *Use visuals*. Experts make notes on frames of transparencies and on their copies of handouts.

D. *Practice*. Experts learn the script well so they can deliver it from the keyword note cards.

SUMMARY

This study had three major focuses: (1) to determine what trainers considered to be the most frequent training delivery problems they faced as novices, (2) to determine how experts respond to these problems with solutions they have found to be effective, and (3) to present the findings in a useful manner for practitioners. The conclusions from each of the two distinct surveys within the study formed the

research base for the major outcomes—the 12 most common training delivery problems novice trainers experience and expert solutions to these problems.

Although advice and speculation abounds about best practices in training, little research is available about the practical problems novice trainers face. Other novice trainer problems should be researched following the general methodology of this study. They should pursue a specific and/or narrow frame of questions and use open-ended questions, which will likely result in excellent responses from both novices and experts. The resulting researcher's problem of dealing with large pools of qualitative data is lessened with new analysis methods such as the KJ Method.

Given the theory-to-practice gap that haunts the training profession, the general novice-expert methodology used in this study may be helpful in closing that gap.

Reflection Questions

18.1. In your experience, what have been some of the instructional delivery problems of new instructors?

18.2 Of the 12 training delivery problems, which 2 do you think are most difficult to overcome?

18.3 For the two problems noted above, discuss the implementation of the specific solutions proposed by the training experts.

CHAPTER 19

*A Model for Developing Employee Work Effectiveness in New Roles and Environments**

Employee careers consist of a series of boundary crossings, as people enter new work organizations, move from department to department, are promoted, become increasingly valued and trusted, or move from one company to another. What is critical from a performance improvement perspective is that each boundary crossing requires an employee to learn a new culture or subculture. Each boundary crossing thus creates a "new" employee with unique learning needs that must be met in order for that employee to move to high performance.

Improving performance of new employees crossing organizational boundaries requires a fundamental redefinition of what a new employee is, and a reconceptualization of new employee development. A *new employee* is defined here as *an employee who has*

*This is a brief description of the Holton model for new employee development. A more complete description can be found in Holton (1996, 1998a, 1998c).

crossed an organizational boundary that requires performance in a new organizational culture or subculture. Conceptually, a 15-year employee who advances to a new level of management is little different from a new hire from outside the company. Both have crossed an organizational boundary into a new cultural context for performance.

New employee development (NED) is then defined as *all development processes organizations use to advance new employees to desired levels of performance*. It encompasses all developmental activities in which an organization engages, regardless of whether they are formal or informal, planned or unplanned. The expected outputs of new employee development are (1) an employee performing at a targeted level of performance and (2) that employee staying with the organizational unit.

Evidence suggests that properly designed programs for new employees can yield substantial returns (McGarrell, 1983). However, research also suggests that new employee turnover remains high (Leibowitz, Schlossberg, and Shore, 1991; Wanous, 1992) and is related to development processes during the first year. These factors, coupled with increasing layoffs and job changes in today's workplace, point to a need for increased focus on new employee development issues (Holton, 1996, 1995).

This chapter presents a brief description of a general model of new employee development that provides a conceptual framework for new employee development as a foundation for developing more comprehensive performance improvement interventions. It embraces the broad definition of new employee, stated earlier, and is applicable to new employees in any type of organizational boundary crossing. Three key questions are addressed: (1) what *learning content* should be included in a comprehensive NED program, (2) what *learning strategies* are most effective to facilitate that learning, and (3) what should be *the role of educational institutions*.

A New Employee Learning Taxonomy

A basic assumption of this taxonomy and socialization in general is that organizations want employees who "fit" (Schein, 1992) and are quick to look for confirmation that a new employee will "fit in." Generally, greater fit leads to higher initial performance and increased

opportunities for success because organizations prefer newcomers that fit the predominant culture, values, and norms (Chatman, 1991).

The taxonomy proposed here (Figure 19-1) is a systematic attempt to extend the macro-structures and develop a comprehensive guide to the learning tasks of new employee development. It most closely follows Fisher (1986) in conceptualizing four content domains for new employee learning: *individual, people, organization*, and *work tasks*. The first three domains comprise what has traditionally been called socialization; the last domain consists of learning, traditionally called job training. Each domain is further subdivided into three learning tasks for a total of 12 learning tasks, which are defined and described below.

Individual Domain

All new employees, regardless of experience level, bring with them accumulated learning, attitudes, and values that have been shaped by previous cultures and work experiences. Considering the highly

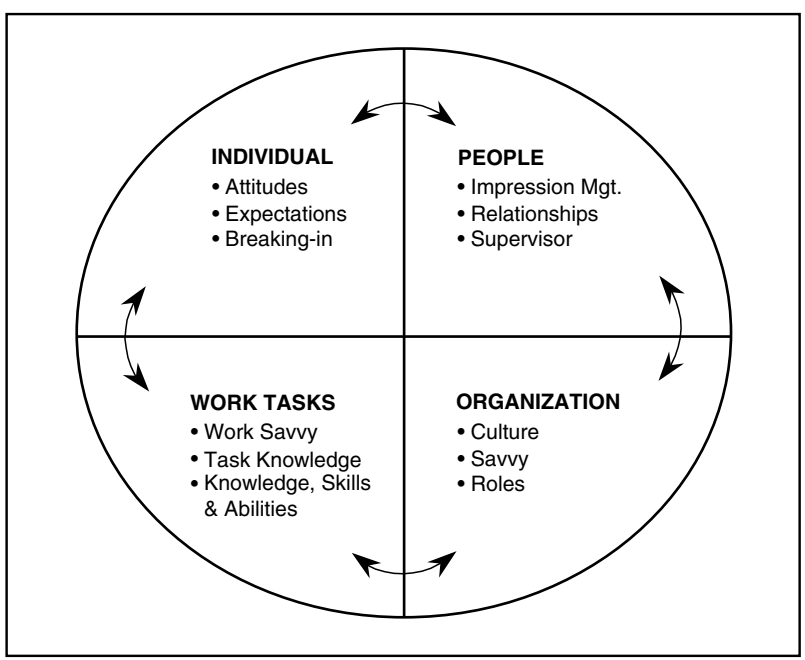


Figure 19-1. *New employee development learning tasks.*

interactive nature of the learning process and the emphasis on congruence between the individual and the organization, it is likely that this prior learning would impact entry success. The *individual* domain, then, encompasses important dimensions of pre-entry learning that are believed to affect socialization outcomes (see Table 19-1). Despite occurring largely before work actually begins, they are important because organizations can influence them during the hiring process, entities preparing employees for work can influence them, and newcomers need to quickly evaluate if their prior learning in these areas might impede entry.

Attitudes. Outcomes might be affected by attitudes in two ways: by the newcomer's attitudes toward the organization, new role, new sub-unit or job; and by the newcomer's attitude toward the socialization and training process itself. Furthermore, attitudes are likely to affect social learning processes directly, perhaps through impressions created by visible behaviors resulting from the newcomer's attitudes (discussed below). Attitudes also are a schema through which new learning and experiences are filtered and sorted (Ertmer and Newby, 1993). It is likely that new employee outcomes can be enhanced by identifying success-related attitudes in an organization and helping newcomers make attitude changes as appropriate.

Expectations. A common cause of problems is a mismatch between a newcomer's expectations and reality encountered in the organization, resulting in frustration and negative attitudes. A large body of research on realistic job previews (RJP) has consistently shown a strong

Table 19-1
Individual domain

1. **Attitude**	Identify personal values and attitudinal predispositions toward a professional career, job and organization; identify success-related attitudes in the organization; match personal attitudes to those desired by the organization.
2. **Expectations**	Develop appropriate expectations about the job, organization and themselves in the job; resolve frustrations due to expectation differences.
3. **Breaking in**	Become aware of the dynamics and importance of organizational entry; master the special skills and strategies required.

correlation between met expectations and job attitudes (Premack and Wanous, 1985; Wanous and Colella, 1989). This research has rather conclusively showed that developing appropriate expectations is one of the foundation tasks for successful new employee development.

Breaking-in Skills. Newcomers must become aware of the importance of the breaking-in period (usually the first 9 to 12 months) and the special skills needed to successfully cross an organizational boundary and become accepted and respected as a member of a new team (Baum, 1990). Many new employees don't begin the process because their internal schema and scripts prevent them from seeing the need to do so. Newcomers must also understand how small groups react when new members are brought in, and should also recognize the different stages associated with gaining membership and the demands placed on the newcomer (Moreland and Levine, 1982; Wanous, Reichers, and Malik, 1984).

People Domain

Learning to perform in new cultural contexts is fundamentally a social learning process (Katz, 1985). It is through interaction between the individual and the work environment that much of the information about the organization is obtained, acceptance is gained, and roles are learned (Ashford and Taylor, 1990; Louis, 1990). In fact, only a small amount of newcomer learning occurs in formal training or from written materials. Research clearly indicates that establishing relationships with people in the organization is a crucial phase of newcomer entry (see Table 19-2).

Impression Management. The initial impressions newcomers make are instrumental in beginning what Schein (1969) calls the "success spiral." Coworkers use newcomers' initial behaviors to make attributions about their performance potential and fit, which in turn affects coworkers' expectations for future performance and their behavior toward the newcomer (Martinko and Gardner, 1987). If initial attributions are positive, newcomers are more likely to be given high visibility or important tasks. If they succeed at them, initial attributions are confirmed and increasingly important tasks are likely to follow. Existing employees are then more likely to establish relationships and help the newcomer succeed. The result is an upward spiral of success leading to more success and greater career opportunity.

Table 19-2
People domain

4. **Impression Management**	Become aware of the role impressions play in establishing the organization's initial evaluation; understand the impression-management process; learn what impressions will be viewed most favorably in the organization; and master the skills and strategies necessary to manage impressions.
5. **Relationships**	Understand the role relationships play in organizational success and the kinds of relationships that should be built; acquire skills necessary to build and maintain effective professional relationships and networks; and learn effective teamwork strategies.
6. **Supervisor**	Become aware of the importance of supervisor/subordinate relationships and their respective roles; identify supervisory style and requirements; build skills needed to be an effective subordinate and to manage the supervisor relationship for mutual gain; learn effective strategies for building a strong working relationship with a supervisor.

Relationships. Positive working relationships with coworkers play many critical roles in successful adaptation and socialization. They help speed acceptance by groups (Baum, 1990); ameliorate the effects of unmet expectations (Major et al., in press); and assist in learning culture (Louis, 1990). Most importantly, positive working relationships provide the primary mechanism for social learning. Other important outcomes of building good relationships may include developing more successful organizational learning strategies and learning how to get things done through teamwork. The challenge for newcomers begins with all the usual problems of building interpersonal relationships. These problems may be particularly acute when the newcomer is perceived as different because he or she is disabled, of a different racial or ethnic background, or perhaps a different gender than is predominant in the organization.

Supervisor. Newcomers who build good relationships with supervisors can obtain more critical information, which has been found to result in greater satisfaction and commitment as well as less stress and intent to leave (Ostroff and Kozlowski, 1992). Weiss (1977)

found that subordinates tended to adopt the work values of their immediate superiors and that supervisors were important role models for subordinates. Research in leader-member exchange (LMX) has linked the relationship between employees and supervisors to a variety of important job outcomes. Newcomers and supervisors have to more quickly and proactively establish a positive relationship.

Organizational Domain

When newcomers establish strong, effective relationships with people in the organization, they can learn the complexities of the organization itself (Feldman, 1989). Table 19-3 represents the *organizational* domain. Recent studies have found a significant relationship between learning about non-task-related dimensions of the organization and entry outcomes (Chao et al., 1994; Copeland and Wiswell, 1994). This reinforces the notion that developing high-performance new employees is a combination of task knowledge and knowledge about the organization, acquired through social learning processes.

Organizational Culture. Organizational culture is widely believed to be related to organizational success (Deal and Kennedy, 1982) and individual success when an individual's values match those of the predominant culture. Much critical information about an organization is contained in culture, which is not written down and is often not even formalized. A quick understanding of the norms, values, and work styles of the organization speeds adaptation and access to good assignments through the success spiral. Without a complete understanding of the organization's culture, a newcomer cannot understand the informal systems, the roles people play, the "taboos" of the organization, and why tasks are performed the way they are; nor can they make sense of many of the other daily experiences of organizational life. Without culture understanding, a new employee may be ineffective even though technically competent at his or her task.

Organizational Savvy. Newcomers have to understand the many informal systems and methods that comprise the way things "really get done around here." Becoming an effective performer means developing the savvy to know how to work through an organization and its people to get results; learning informal procedures;

Table 19-3
Organization Domain

1. **Organizational Culture**	Understand elements of organizational culture and how they affect performance; become aware of the importance of fitting into the organization's culture; acquire skills to learn key elements of culture that are not explicitly taught.
2. **Organizational Savvy**	Become aware of the informal organization and success factors in the organization; understand appropriate means for getting results through the informal organization; acquire skills to learn the informal organization and effectively use it to achieve desired results.
3. **Organizational Roles**	Locate oneself in the larger perspective of the organization's goals; understand the role and identity of a newcomer in the organization; learn what appropriate expectations and activities are for that role; accept role limits and realities, and reconcile role conflicts and ambiguity.

understanding the politics of the organization; and learning to negotiate informal power structures and systems. Often called "learning the ropes," this is the process of using one's knowledge about culture to make sense of what happens in daily organizational activities (Louis, 1980) and to map relevant players in the power structure (Louis, 1982). Without an understanding of how to work within the organizational system, task competence can quickly be obscured by repeated violations of unwritten norms or political gaffes.

Organizational Roles. Graen (1976) defines *role making* as having four components: (1) acquiring knowledge about constraints and demands, (2) receiving and sending persuasive communications about behavior in this role, (3) accepting a particular pattern of behavior, and (4) modifying this behavior over time. Systematic efforts to help newcomers understand their roles clearly, obtain information to reduce ambiguity, understand the organization's expectations, and learn ways to reduce role conflict in initial assignments should contribute to improved outcomes (Feldman, 1989).

Work Task Domain

The fourth domain is most familiar. There is no question that understanding the tasks of the job and having the correct knowledge, skills, and abilities is essential to new employee success (see Table 19-4). Work savvy, described next, is less familiar but equally important.

Work Savvy. Incumbent employees quickly forget how important it is to develop a schema or system for understanding task assignments and for prioritizing, processing, and accomplishing the job. Information must be sorted to determine what is important, limited resources must be allocated, and skills learned in training applied to real work problems. Although some may lump this under the more global construct of "learning the ropes," this taxonomy separates it because it deals with the *newcomer-work* interaction rather than the *newcomer-organization* interaction. It is particularly significant for early careerists or career changers whose internal schema for getting work done may come from a significantly different environment.

Task Knowledge. Certainly mastery of the job tasks is necessary for success, but it is equally certain that it is insufficient by itself. It should be readily apparent from the previous discussion that complete task competence is impossible beyond a basic level without successful learning of all tasks. If task training is done in isolation, performance is problematic.

Table 19-4
Work Task Domain

1. **Work savvy**	Understand how to apply knowledge and skills to the job, and acquire generic professional skills (for example, communication, time management) necessary to function in the job.
2. **Task knowledge**	Understand the basic tasks required on the job and ways to perform them successfully.
3. **Knowledge, skills and abilities**	Identify knowledge, skills, and abilities needed to perform tasks successfully, both now and in the future; develop formal and informal learning skills necessary to acquire the knowledge, skills, and abilities.

Knowledge, Skills, and Abilities. With a complete understanding of the tasks on the job and the newcomer's role, a new employee can see the entirety of the knowledge, skills, and abilities required to perform them. New employees may be prone to be overconfident about their knowledge prior to successful socialization. For many, one outcome of new employee development is "learning what they don't know." Some newcomers report a humbling experience when they realize they aren't as prepared as they thought they were (Holton, 1998a).

New Employee Development System

These 12 learning tasks are accomplished through four different learning venues: foundation learning programs (e.g., schools), external job training (e.g., postsecondary vocational education), employer-based job training programs, and learning in the workplace. *Foundational learning* is defined as programs or institutions that provide foundation learning not directed at any specific job. *External job training* consists of programs or institutions that provide job training, but not for a specific employer. *Employer-based job training* programs are those activities offered by a specific employer for its employees and designed primarily to provide knowledge and skills necessary to complete job tasks. *Workplace learning* activities include all learning activities that occur in the workplace such as on-the-job training, social learning, and informal learning.

The 12 learning tasks and four interventions should be an integrated system to achieve new employee performance goals (see Figure 19-2). Potential employees engage in four types of interventions to complete 12 learning tasks, which, if completed successfully, should result in the new employee achieving targeted levels of performance and staying with the organization. The new employee development process is not conceptualized here as linear, but rather as a cyclical process, where newcomers may cycle through learning tasks and learning events repeatedly.

Challenges for Educational Institutions

Using this model as a framework, education should assume responsibility for four key aspects of development for their graduates beyond

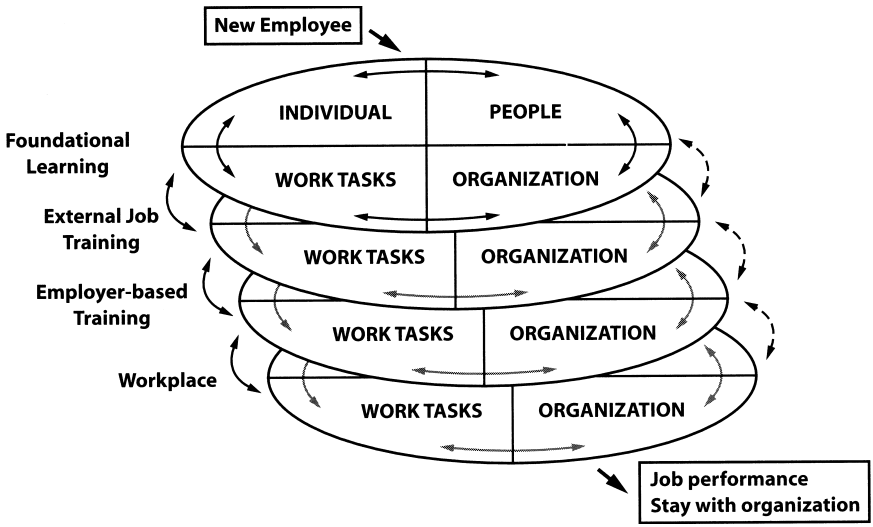


Figure 19-2. *New employee development system.*

the task-related knowledge currently provided. These key aspects are (1) develop the individual domain, (2) teach basic skills in the people and organizational domain, (3) build awareness of the entire scope of learning tasks, and (4) develop organizational learning skills.

Develop the Individual Domain. There is little reason that education and job preparation institutions cannot take full responsibility for developing in their graduates sound work attitudes, realistic expectations, and an understanding of how to enter an organization. Clearly there will be certain organization-specific components that may need adjustment later, but the difficulties during the transition are more basic ones. For example, attitudes such as flexibility, a commitment to quality, working for the good of the team, a willingness to pay one's dues, and desire to learn, are often missing.

Teach Basic Skills in the People and Organizational Domains. These two domains are much more organization-specific, so education and training has a more limited role. However, basic skills in each domain should be taught so graduates can focus on the organization-specific components. For example, in the people domain, students can be taught principles of impression management and how

to determine effective strategies in their new organization. They should certainly be taught how to build work relationships and networks. And, they can be taught basic skills of effective subordinates, how to determine effective subordinate skills in their new organization, and how to manage a boss.

In the organization domain, all graduates should understand what organizational culture is, how it affects their careers, and how to decipher it. And, every graduate must understand something about organizational politics, how informal systems work in organizations, and how to use those systems to get results. Finally, they can be taught what the role of a newcomer is and how to make sure they meet role expectations.

Build Awareness of the Entire Scope of Learning Tasks After Employment. When teaching learning tasks in which students cannot be given all the answers, such as organizational culture or organizational savvy, colleges can at least teach students the questions to ask for advanced learning. Newcomers need to realize what they don't know about being successful in an organization, know what questions to ask, and be motivated to engage in the new learning.

Develop Organizational Learning Skills. Frequently overlooked is the fact that most of the learning that occurs during organizational entry requires learning skills that are fundamentally different from those cultivated in college. First, many things can only be learned by interacting with other people, so *social learning* skills are most important. Second, the learning process is usually an *experiential* one, because the learning occurs while engaged in work projects. Third, *self-directed learning* becomes the norm because newcomers have to take the initiative to learn much beyond the task knowledge to do their jobs. Fourth, the learning is *unstructured* in that it has no definite beginning and ending points. And, it is *indeterminate* in that it may be difficult to tell when one has the "right" answers or when learning is completed, especially when dealing with complex or unusual problems. In short, it is a messy, but continuous, process.

Reflection Questions

19.1 Based on your personal experience, what have been some of the new employee entry and development issues you have faced?

19.2 Discuss how an organization could go about implementing the "new employee development system."

19.3 Discuss what you think the costs and benefits would be to an organization that implemented the "new employee development system."

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